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Fig. 1

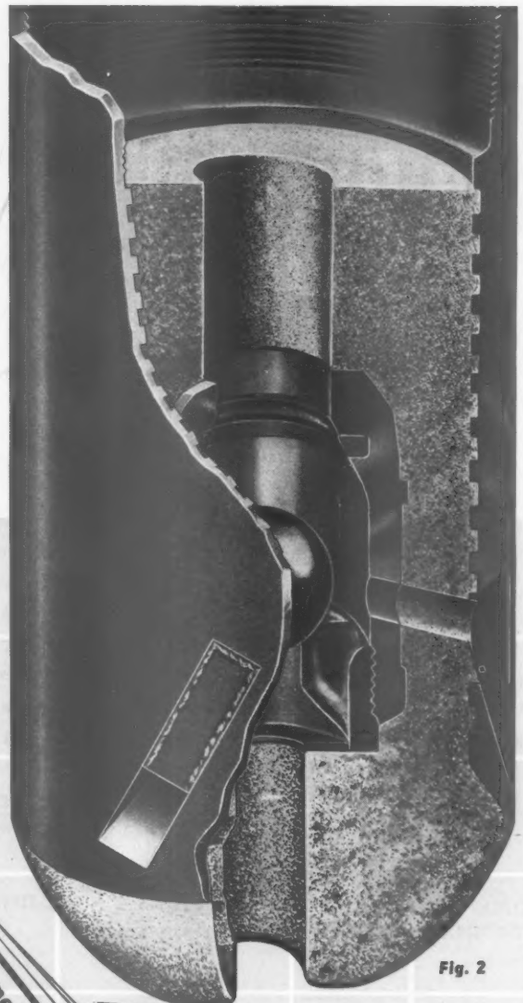

Fig. 2

IN ADDITION to facilitating the Removal of Bridges and Washing Formation when landing casing, the New Baker Cement Wash-Down Whirler Float Shoe performs another important task - - - that of insuring best possible chance for a successful cement job - - - with minimum danger of channelling.

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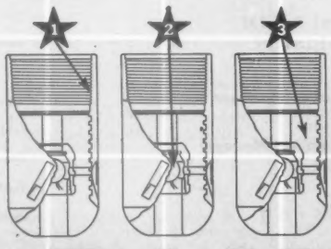

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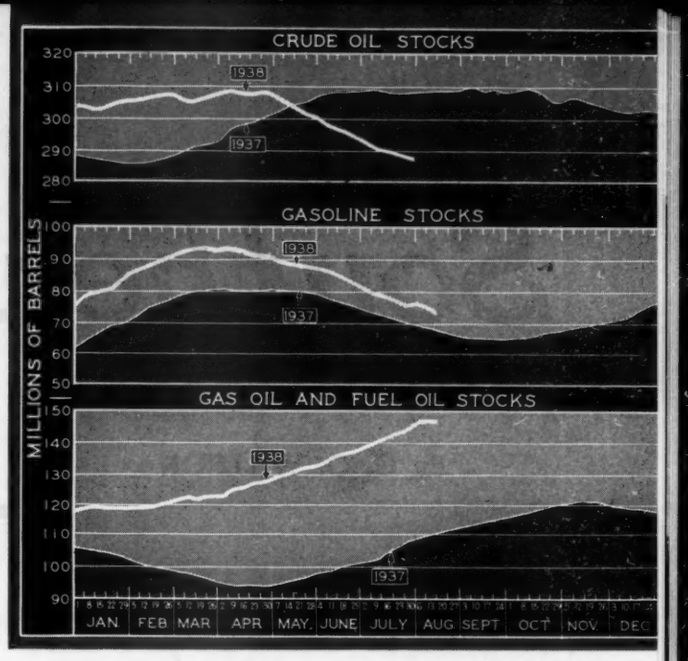
Trends

Developments Point to Need of Reduced Output in September


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
1938
1937
MILLIONS OF BARRELS
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

AN increase of 36,469 barrels in daily crude production last week, bringing national output to the highest levels since early May, and recent increases in crude runs to stills, coupled with the unsatisfactory developments in both crude oil and refinery markets, are bringing support for a curtailment in operations during September. A return to the Saturday shutdown in Texas, as well as a continuance of the Sunday shutdown, is receiving consideration in that state, with lower allowables advocated for several of the other states.

CRUDE PRODUCTION *3,350,970 barrels daily average—up 36,469. One year ago 3,710,491 barrels.*

CRUDE STOCKS *288,514,000 barrels as of July 30—down 929,000. One year ago—308,666,000 barrels.*

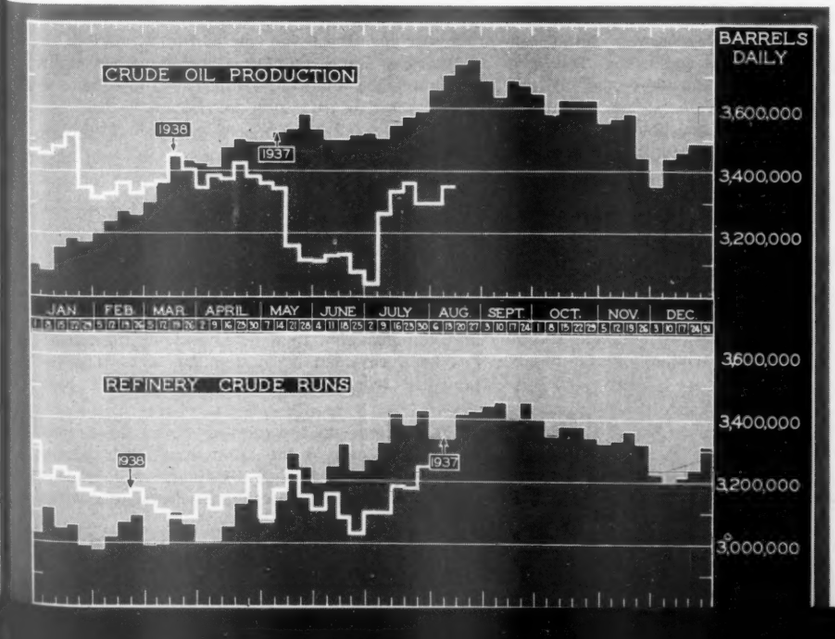
GASOLINE STOCKS *74,387,000 barrels as of August 13—down 2,477,000. One year ago—69,087,000 barrels.*

GAS AND FUEL OIL STOCKS *146,261,000 barrels as of August 13—up 1,967,000. One year ago 109,644,000 barrels.*

REFINERY RUNS *3,295,000 barrels daily week ending August 13—up 55,000. One year ago 3,340,000 barrels.*

In the crude producing division, adequate solutions of local problems which have developed in the K.M.A., East Texas, southern Oklahoma, western Kansas, and several other points have not been found, according to those in direct touch with conditions. These local situations are not considered critical, but do reflect conditions which have to be taken into consideration in projecting operations through September and the rest of the year.

It is believed by many that a reduction of 150,000 barrels or more daily in September would prove beneficial and serve to eliminate any weak spot in the production situation. This would permit a continued reduction in crude stocks and should also furnish the background needed to correct conditions in the areas previously named.



In the refining end, it is now apparent that gasoline stocks will not be reduced to the desired point by September 1. This will mean that September and October operations will have to be on a basis which will assure further withdrawals from gasoline stocks during those two months. It is also pointed out that reduced refinery runs are desirable from the standpoint of the heavier oil inventories which have been increasing steadily for several months and which are now at the highest point in the history of the industry. While the consuming season for many of these fuels will start within the next 30 days the business recovery has not spread to the point where it has materially increased the industrial, rail,

DAILY AVERAGE PRODUCTION FOR WEEK

	Aug. 13, 1938	Bur. Mines Aug. est.	Aug. state Allowable	Aug. 6, 1938
Oklahoma City	116,475	.....	.....	106,775
Fitts	42,275	.....	.....	38,500
Remainder of State	280,825	.....	.....	277,625
Total Oklahoma	439,575	529,700	428,000	422,900
East Texas	440,000	.....	.....	440,100
West Texas	218,950	.....	.....	219,949
North Central Texas	104,697	.....	.....	107,297
Texas Panhandle	71,849	.....	.....	73,397
East Central Texas	97,550	.....	.....	99,901
Gulf Coast Texas	347,350	.....	.....	344,599
Southwest Texas	107,648	.....	.....	106,550
Total Texas	1,388,044	1,377,800	1,614,805	1,391,793
North Louisiana	82,225	.....	.....	81,470
Gulf Coast Louisiana	173,800	.....	.....	180,250
Total Louisiana	256,025	256,100	256,712	261,720
California	672,500	649,300	610,000	651,150
Kansas	165,200	169,300	165,500	151,725
Arkansas	55,775	53,900	.....	54,950
Illinois	55,323	45,800	.....	54,656
Michigan	48,928	60,000	.....	51,567
Eastern Fields	95,280	102,300	.....	97,440
New Mexico	107,050	112,300	.....	107,000
Rocky Mountain area	67,270	81,600	.....	69,600
Total United States	3,350,970	3,438,100	.....	3,314,501

and marine demands for the residual fuel oils. Economists are pointing out there are sufficient quantities of these heavy fuels on hand, so there need be no concern as to supplies during the fall and winter months.

The latest Bureau of Mines report covering demand for crude oil and refinery products (see page 106 this issue) continues to be encouraging. The total demand for all oils the first half-year was 99.2 per cent of that in the same period in 1937. Aided by a large gain in exports, total gasoline demand continues to run about 3 per cent ahead of last year. The largest declines are in the residual fuels and lubricating oils, with decreases of 13 and 15 per cent respectively.

Southern Illinois Is By Close-in

By C. O. WILLSON

The Southern Illinois basin, which two years ago was hardly more than a geological term to most of the industry, is rapidly coming into its own as one of the major oil discoveries of the past several years. Recent developments have widened the interest in this area and brought new operators into the field, so that with more than 200 wells drilling it has become the most active spot in the oil business at this time.

Numerous articles have appeared in this publication over the past 18 months chronicling the new discoveries, the geological interpretations, engineering practices and general operating conditions.

By way of summary it is sufficient to explain here that since the first discovery in Marion County in January, 1937, 23 new pools have been discovered and production has passed 40,000 bbls. daily making a total production of 55,000 bbls. daily for the old and new pools.

Large Reserve

Approximately 1,200 wells have been drilled. The proven area probably exceeds 50,000 acres and the Illinois State Geological Department says that the 1937-1938 discoveries have added more than 200,000,000 bbls. of oil to the state's proven oil reserves with more to come. Some of the other estimates of established reserves and acreage are much higher. The crude is similar in refining value to the high-gravity crudes of the Mid-Continent.

This article is concerned with the economic significance of this new area to the oil industry generally rather than a discussion of the latest pool or a detailed review of past and present accomplishments.

Southern Illinois has been blamed for many unwanted developments in recent months. Oklahoma and Kansas producers, prorated to what they consider "the bone," have been told that their situation has been brought about by the markets taken from them by this new area to the north and east. Reduced pipe line shipments to the north have resulted in the laying-off of pipe line employes.

Affects Other Areas

Mid-Continent refiners, unable to advance their prices to profitable levels, are confident their situation has something to do with the Illinois development. Lease brokers with "sure shot" propositions in Texas, New Mexico and other states find many land departments and independent operators interested only in inside and wildcat leases in this new area which most of them have never seen.

Past experience has shown that the significance of new developments of this type can be easily exaggerated out of proportion to their importance. They are blamed for ills, the causes of which are due to fundamental conditions of which the thing complained of is only a symptom. In this case the present production of Illinois, including the old fields which have been producing for more than 30 years, is still only 1.5 per cent of the national total and should it exceed 100,000 bbls. daily in 1939 as many predict, it will still represent less than 3 per cent of the expected needs for that year.

Production Changes

While discounting the hyperbole in this instance it would be foolish for the oil industry generally to ignore the marketing importance of a new oil production section which in this case happens to be highly favorably located.

Relative to the charge that Illinois has taken markets from some of the larger and older producing areas the following table shows there have been changes over the past year in the percentage of total output obtained from the individual states:

PERCENTAGE OF TOTAL PRODUCTION BY AREAS

	August 1938*	August 1937
Arkansas	1.6	.8
California	19.6	18.1
Illinois	1.6	.5
Kansas	4.6	5.4
Eastern fields	2.9	2.6
New Mexico	3.2	3.0
Oklahoma	12.7	17.5
Louisiana	7.9	7.1
Michigan	1.5	1.3
Texas	41.9	41.6
Rocky Mountains	2.1	2.0

*Week ending August 6.

This table shows that not only Illinois but Michigan and the entire area east of the Mississippi River is furnishing a larger percentage of the total production in the United States than it did a year ago. A study of the production data will show that while several of the larger oil producing states have curtailed their output over the past year the fields east of the Mississippi in most cases have maintained or expanded their production so that as a unit they now have a larger share of the total market.

The largest percentage reduction as shown in the table applies to Oklahoma. A year ago Oklahoma was producing 17.5 per cent of the crude produced in this country. It is now 12.7 per cent. This is not entirely due to Illinois, apparent from the fact that Oklahoma's total decline is more than twice as much as Illinois' present production. That Illinois, however, has been a factor necessitating reduced production in Oklahoma and, to a lesser extent, in Kansas has been revealed as state allowables were established from month to month over the past year.

This brings up the question as to the extent of the area east of the Mississippi River which for years has looked to Oklahoma and Kansas for the bulk of its petroleum supplies either in

Factors Favoring Illinois

Pipe line transportation charges to principal refining centers of Middle West are 23 cents or more per barrel under Mid-Continent rates.

Production costs are low compared to average of new production in other parts of the country.

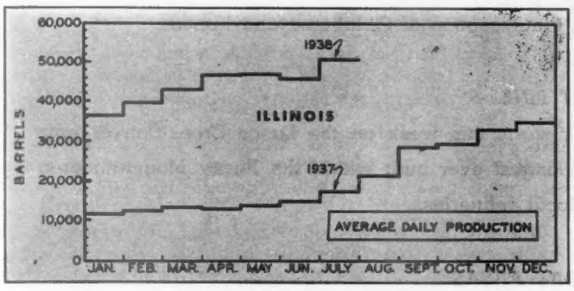
Location is east of Mississippi River, where 60 per cent of petroleum products are consumed and less than 6 per cent of crude supplies are produced.

Refiners in field enjoy substantial savings in freight rates on shipments within an area that consumes 20 per cent of gasoline and other products.

Properties of crude are favorable for skimming and cracking operations.

Burning off sludge pond in southern Illinois

Helped Markets



the form of crude oil or refinery products. The following table lists the major refineries in three states which in the past have obtained all or part of their crude supplies from pipe lines connecting to Oklahoma, Kansas and part of Texas and New Mexico:

PRINCIPAL REFINERIES LOCATED IN ILLINOIS, INDIANA AND OHIO

	Daily capacity
Chicago Area	
Texas Co., Lockport, Ill.	25,000
Cities Service Oil Co., East Chicago	25,000
Shell Petroleum Corp., East Chicago	30,000
Sinclair Refining Co., East Chicago	40,000
Globe Oil & Refining Co., Lemont, Ill.	16,500
Standard Oil Co. (Indiana), Whiting, Ind.	110,000
Total	246,500
Southern Illinois	
Indian Refining Co., Lawrenceville, Ill.	16,000
Ohio Oil Co., Robinson, Ill.	10,000
Total	26,000
East St. Louis	
Shell Petroleum Corp., Wood River, Ill.	43,000
Socony-Vacuum Oil Co. (Lubrite), E. St. Louis	7,200
Standard Oil Co. of Indiana, Wood River, Ill.	20,300
Total	70,500
Ohio Refineries	
Gulf Refining Co., Toledo	18,000
Gulf Refining Co., Cincinnati	18,000
Pure Oil Co., Heath	10,500
Standard Oil Co. (Ohio), Cleveland	21,000
Standard Oil Co. (Ohio), Toledo	17,000
Standard Oil Co. (Ohio), Lima	7,500
Sun Oil Co., Toledo	14,000
Standard Oil Co., Latonia, Ky., near Cincinnati	7,700
Total	113,700
Total (three states)	456,700

In addition there are approximately 50 smaller refineries located in these states and the adjoining states of Kentucky and Michigan. They are part of the oil consuming territory which extends from the Mississippi River to a north and south line approximately parallel to the Ohio-Pennsylvania state line. The territory east of this line, in addition to its local production, looks to water and pipe line deliveries from the Gulf Coast for the bulk of its petroleum supplies. The territory west of this line and north of the Ohio River has for years obtained more than 75 per cent of its petroleum products from crude oil produced in Oklahoma and Kansas with small quantities of refined products from the remainder of the Mid-Continent. There is some overlapping of these divisions of supply and market outlets but they are generally recognized by the industry and also by the governmental agencies in their several investigations of transportation and marketing conditions in the oil industry. Herein lies the strength of the Illinois development.

While this discussion is confined to that area the same situation applies to Michigan and Kentucky with their expanding crude production and refining operations and any other section within this large consuming area which now obtains the bulk of its crude oil and finished products from sources several hundred miles distant.

What the Illinois development means in savings on pipe line transportation charges is revealed in the following table showing trunk-line rates on crude oil from station points in Oklahoma and Illinois to some of the larger refining centers from which deliveries can now be made:

COMPARATIVE PIPE LINE RATES*

	Oklahoma	Southern Illinois	Difference
Cleveland, Ohio	55	31.5	23.5
Toledo, Ohio	52.5	29	23.5
Lima, Ohio	51	22	29
Latonia, Ky.	51	23	28

*Rates shown in cents per barrel of 42 gallons.

This table shows that in transporting crude oil by pipe line to large refining centers in Ohio and Latonia, Ky. (across the Ohio River from Cincinnati), crude oil from southern Illinois has a pipe line rate advantage of from 23.5 to 29 cents per barrel over Oklahoma.

This comparative situation has already resulted in a substantial change in pipe line shipments from the two areas. Previous to the revival in Illinois activity the Oklahoma Pipe Line Co. and its affiliated company, the Ajax Pipe Line Co., transported large quantities of crude oil to several of these Ohio refineries—principally the Standard Oil Co. of Ohio. This crude was moved by the Oklahoma and Ajax pipe lines and then tendered to other systems east of the Mississippi which delivered it to the refineries.

Over the past year the Oklahoma company has lost a large part of this business. The Standard of Ohio through its own pipe line system, the Owensboro Corporation, is a large buyer in Illinois, the oil being delivered to its Ohio refineries through connecting pipe line systems. The Pure Oil Co., largest producer in Illinois, with its own pipe line system connecting to the Illinois Pipe Line Co. system, has also greatly reduced its purchases of Oklahoma crude oil.

Lower Pipe Line Rates

Part of the crude going to the Ohio refineries of the Standard of Ohio and Pure companies comes from Michigan through a line built two years ago connecting Michigan fields to Toledo refineries. The Sun Oil Co. also transports crude oil through this line. The pipe line tariffs on crude oil from Michigan fields to Toledo are 11 and 14 cents per barrel showing that state has an important advantage not only over the Mid-Continent but the Illinois area.

At present southern Illinois crude is not being delivered to the large refining centers in the St. Louis and Chicago areas. It seems reasonable to assume, however, this will be done should Illinois production continue to climb. The present trunk line rate to Chicago from Oklahoma is 38.5 cents per barrel a distance of about 700 miles. Chicago is only 250 miles from the center of development in southern Illinois. The Oklahoma rate to the St. Louis group of refineries is 32¼ cents per barrel. These refineries are approximately 100 miles from the Illinois fields. The pipe line rates given in this discussion do not include the gathering charges.

The conclusion to be reached in this analysis is that Illinois crude oil is or can be delivered to the principal centers east of the Mississippi River at savings of 23 cents per barrel or more

(Continued on Page 34)

Portable drawworks being brought to location in Centralia field

SPARKS FROM THE NEWS

NORTH DAKOTA RECORD

The first test to pass 10,000 feet in the Rocky Mountain area is being drilled in North Dakota, a state which does not have commercial oil production at this time.

IMPORTANT ADVANTAGE

Southern Illinois development has an important advantage over the larger oil producing states in that it is several hundred miles closer to the major consuming markets.

FOREIGN AID

Foreign buyers distributed more than $200,000,000 among producers and refiners in this country the first six months. There are other industries which failed to obtain that volume of business from their domestic customers.

STILL GOING

There is still considerable refinery activity in the Mid-Continent, indicated by the fact that 133 plants in August operating 24 hours daily will refine 75,000,000 barrels of crude oil into finished products.

PRICE-CUTTER OPPOSES

The application of fair trade acts in marketing is welcomed by the refiner, dealer, and consumer, but not by the price-cutter who makes it necessary.

IN REVERSE

The effort to improve refinery gasoline markets by advancing tank-wagon schedules has failed in the Middle West. The usual procedure in the past has been to have higher refinery prices push up the wholesale and retail schedules.

MORE TRAILERS

The car-trailer idea, which was to be so important in gasoline consumption, has failed, according to one observer, which indicates that he has not taken a long trip in his car or observed the tourist camps.

NO COLLAPSE

While gasoline markets could be stronger, they have not shown the weakness projected by those who were predicting a collapse in the motor fuel markets by late summer.

PERCENTAGE CHANGE

All of the important oil-producing states have a larger percentage of the total crude market than they had a year ago with the exception of Oklahoma and Kansas.

LONGEST LINE

Work starts this week on the Lance Creek-Denver pipe line, the longest ever built within the Rocky Mountain area serving local refineries.

OIL IN DRY AREAS

Cowley County, Kansas, is another area where they are finding oil wells in sections which many thought had been condemned by dry holes drilled several years ago.

KEROSENE STRONG

Kerosene also has a strong depression-proof position, with this year's domestic demand running better than 2 per cent ahead of any previous year.

INTO WILBARGER

A test of a 3,800-foot formation indicates that the K.M.A. field in North Texas may be extended into Wilbarger County.

OPPOSE REDUCTIONS

Those who opposed reductions of import taxes on Venezuela oil Monday feel that increased oil shipments from there will complicate solution of domestic problems.

UNDER THE MISSISSIPPI

Continental Oil Co. levee well, Hester dome, St. James Parish, Louisiana, first well to produce oil from under the river

Arguments Presented Against Venezuela Treaty

By HENRY D. RALPH

WASHINGTON, D. C., Aug. 15.—Strong arguments against reduction of the import tax on crude petroleum and fuel oil as a part of the forthcoming reciprocal trade agreement with Venezuela were given the committee for reciprocity information today by spokesmen for both the oil and coal industries. No one appeared to urge a reduction.

Chief oil witness was Russell B. Brown, general counsel for the Independent Petroleum Association of America, who was asked many questions by the committee.

In addition to a formal statement supplementing a brief previously filed, Mr. Brown declared that, as a natural resource, oil requires special tariff consideration. Since the United States has a supply far in excess of requirements, states must apportion production and for this it is necessary to have advance estimates of imports; an increase will embarrass conservation plans. Importing companies have held down imports to a regular amount but if the tax is cut they will feel they have the government's blessing to increase imports. At present the fear of congressional action prevents them from increasing imports unduly, but with the tax cut and congressional action impossible for the life of the agreement, imports might increase alarmingly. Relatively small imports of cheaply produced oil can set the price for all United States production, and importers would not mind lowering price on their own domestic production because they are integrated companies. A price decrease means excessive and wasteful production in order to meet fixed charges. Independents, backbone of the industry, would suffer, and this is one case where tariff reduction would lead to monopoly.

Several committee members said they were unable to follow the argument that conservation is enhanced by preventing imports. Mr. Brown replied that undeveloped reserves are a national necessity but that capital will not be attracted to exploration unless the crude price is sufficiently high. Also a low price means abandoning many wells before there is complete oil recovery.

Committee Questions

Asked how a small ratio of imports can set domestic price, Mr. Brown replied that if the duty is frozen at a lower point imports could be increased at any time causing a jittery market, whereas the conservation program requires stable conditions and the import situation affects the national program of preventing waste. He added that imports for vessel supplies are free of tax and that Venezuela crude is particularly adapted for this business, although excess supply of heavy oil or bunker grade is one of chief troubles of the domestic industry at present.

Committee Chairman Henry F. Grady remarked that briefs filed claim Venezuela oil displaces large quantities of both oil and coal and that estimates of damage done individual companies totals several times the value of Venezuelan imports. Mr. Brown replied that obviously not everybody could get all the business now going to Venezuelan oil, but these estimates indicate imports cause real injury.

E. B. Reeser, representing the Oil Producers Agency of California, opposed a reduction in the tax on the ground that the oil industry in this country is in a desperate condition and an increase in imports would definitely harm California. He said shipments from California to the East Coast have fallen off due to imports and California could regain 75 per cent of this market if imports were cut off.

Mary C. Mallon, for the Pennsylvania Grade Crude Oil Association, said an increase in imports would upset the conservation program which has been of great value to this group although producers are losing money at the present crude price and refiners are hanging on in hope of better prices. Shutdowns would mean permanent loss of large reserves of crude of peculiar lubricant qualities.

Chairman Ernest O. Thompson of the Interstate Oil Compact Committee wired that army duties prevented his appearance but he relied on a brief filed by himself.

Coal interests also opposed a duty cut. John B. Scott of the Anthracite Institute said 44 per cent of a barrel of crude goes to fuel oil and that of the 13,000,000-ton annual loss of the coal industry to fuel oil, 5,000,000 tons is due to imported oil. John D. Battle of the National Coal Association declared fuel oil is being dumped on the market and said the oil import situation is so involved the Venezuelan agreement should not further complicate it.

Congressmen Oppose

Two congressmen also opposed a cut, Jennings Randolph of West Virginia, and J. Harold Flannery of Pennsylvania. Both pointed out the trade agreement action would preclude congress taking steps to increase the oil duty if a situation should warrant any time during the life of the agreement and asked that congress' hands not be tied.

Mr. Randolph said further that oil imports would hamper the government's efforts to rehabilitate the bituminous industry through the Guffey act, increase bankruptcies and unemployment in the industry, and increase the relief burden.

Mr. Flannery painted a similar picture of ruin in the anthracite regions. While discussing displacement of coal by imported oil, Mr. Randolph was told by Chairman Grady that oil exports exceed imports so net imports are minus. After conferring with associates, Mr. Randolph replied that oil exports are from California whereas oil imports displace coal markets in the east.

Mr. Brown said his statement was designed to supplement the brief which he filed with the committee supporting the present excise taxes on petroleum imports and opposing any reduction in these in the proposed trade agreement with Venezuela.

"This statement, like the brief, is made in behalf of the Independent Petroleum Association of America and also in behalf of the following associations who have authorized me to represent them in this matter: Mid-Continent Royalty Owners Association, Kentucky Oil and Gas Association, Illinois-Indiana Petroleum Association, Oil and Gas Association of Michigan, New Mexico Oil and Gas Association, National Stripper Well Association, New York State Oil Producers Association, Oklahoma Stripper Well Association, Southern Oklahoma Oil and Gas Association, Central Pennsylvania Oil Producers Association, Bradford District Pennsylvania Oil Producers Association, Rocky Mountain Oil and Gas Association, West Central Texas Oil and Gas Association and the North Texas Oil and Gas Association.

Rig, oil and clouds in eastern Venezuela

"We had hoped by the day of this hearing to have the argument offered in support of the action contemplated by this proposed agreement. As yet, we do not have any such information and feel somewhat at a loss as to how to proceed to answer an argument, the contents of which are unknown to us. In the absence of any known argument in support of the contemplated action we find we must first explore for possible arguments against which we must present our answer. In this search we go back to the purpose stated in the act authorizing such action. It seems difficult to place among the purposes of this act the proposal to reduce the excise taxes on petroleum imports. Our exports to Venezuela have not been lessened by the imposition of the excise tax on our petroleum imports from Venezuela. On the contrary, these exports to Venezuela have increased until today they are about four and one-half times the amount which they totaled in 1932, the year of the imposition of these excise taxes. We cannot see how this increase would be made greater by reducing these excise taxes. Exhibit 1, attached hereto, gives the figures by years for these imports according to the data compiled by the Department of Commerce. Our imports from Venezuela have

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FAIR TRADE ACT AIDS MARKETING

By H. Stanley Norman

NEW YORK, Aug. 15.—The transition from chaos to order in New Jersey's troubled gasoline market is not yet complete, but that conditions are infinitely better than prior to the effective date of the state's law regulating retail sale of motor fuels, June 1, 1938, and prior to amendment of its price maintenance statute, is admitted by all.

More recently an experiment with minimum price contracts under the New York State Feld-Crawford Act has been launched across the Hudson River, but the final results are still in doubt. Probably 75 per cent of the gallonage business within a radius of 50 miles from New York City was placed under minimum price contracts since August 5, but the 25 per cent remaining out of contractual relationship actually holds the key to success or failure of the experiment in New York launched by Socony-Vacuum Oil Co., Inc.

As explained later, the New York Feld-Crawford Act is not included in the small group of state laws which makes provision for protection of commodities distributed through vending machines, a classification in which gasoline pumps are generally conceded to rest. There is, however, a difference in expert opinion as to whether gasoline can be included among commodities protected by price maintenance legislation unless the act specifically includes trade-marked products distributed through vending machines. Some believe this specific inclusion of gasoline pumps is not essential, leading to the promulgation of minimum resale contracts with dealers by several of the larger marketing companies in the metropolitan New York area during the past two weeks.

There may be some doubt as to the ability of manufacturers (in this case refiners) to enforce minimum resale price contracts with dealers since gasoline as a commodity is distributed through machines and not delivered directly from a trade-marked container. Those taking the affirmative contend that trade-marks appearing on pumps comes within the scope of the law and argue that pumps by direct connection are a part of the container.

Contracts signed by Socony-Vacuum, Colonial Beacon, Cities Service and others in New York, Queens, Bronx, Kings and Nassau counties have gone far in correcting a demoralized price condition among service stations of the New York City area. Minimum retail resale prices established by those placing dealers under contracts are 17½ cents per gallon, including 5 cents taxes, for regular motor fuel and 19½ cents per gallon for premium grades. Price shading is still noticed in certain parts of Brooklyn (Kings County) and in other isolated areas where dealers are making a bid for increased gallonage so long as they are under no obligation to set and maintain minimum prices.

The Petroleum Dealers Chamber of Commerce is supporting the effort to stabilize prices in New York and is bringing pressure on the companies which have so far declined to place dealers under Feld-Crawford Act contracts. It was reported that dealers in general are in favor of the minimum price policy claiming it enables them to make a legitimate profit on station operations.

In Middle West

Efforts on the Atlantic Coast to stabilize retail gasoline prices are symbolic of similar efforts in other parts of the country. In the Middle West last week, Standard Oil Co. of Indiana was made defendant in an action brought by the Retail Gasoline Dealers Association. Standard of Indiana entered a plea of not guilty on arraignment in Recorder's Court on a warrant charging unfair discrimination with intent to injure competition in the sale of gasoline in tankcar lots to the Merchants Supply Co., which is owned by Samuel Gershenson, a partner of Ned's Auto Supply Co. Ned's, operator of a chain of super-service stations, has been selling regular Standard gasoline at 15.4 cents, 3½ cents below the established price. The Retail Gasoline Dealers Association planned to seek Circuit Court injunctions restraining Standard and two other major oil companies from selling wholesale gasoline at reduced prices. Gershenson said his company was able to buy gasoline from Standard at tankcar prices only because it buys and sells in large volume, which he said, was standard practice in Detroit and other parts of the country.

The Michigan dispute involves the Fair Trade Act, legislation designed to prevent sale of commodities to one competitor at a lesser price than to others, and is totally disassociated from the minimum retail resale price maintenance acts upon which action is now taking place in New York and New Jersey.

Developments in the effort to eliminate "cutthroat" retail price warfare among service station operators suggest a study of the trend in legislation enacted by individual states to protect owners of trade-marks and branded commodities.

Curious as it may seem, there are only 5 states, out of 43 with resale price maintenance statutes, which have specific provisions for gasoline and other liquids dispensed under similar conditions. The oversight, if such it may have been, probably originated with California which in 1931 was the first state to enact price maintenance legislation. Being the first resale price maintenance act adopted by the legislature of any state, the California statute was subjected to and withstood various attacks in state and federal courts and even the United States Supreme Court. The California law, therefore, became the pattern for other states and in many the entire wording was imitated.

The first limitation in the resale price maintenance acts of 38 states out of the 43 having this type of legislation is worded with minor variations. Most of them expressly include commodities "the label or content of which" bears the trade-mark, etc. Half a dozen states substitute the word "container" for content, but, general as the terms seem, there is serious doubt that any of the resale price laws so phrased extend protection to the producers and distributors of trade-marked gasoline dispensed through service station pumps and at bulk plants. Lawmakers overlooked the fact, intentionally or unintentionally, that it was impossible to stick a label or a brand name on gasoline pumped as a fluid from an underground storage tank to the tank of an automobile.

It was not until 1937, when Utah, Nevada and Oregon, by original acts, and California, by amendment, inserted the words "or the vending

equipment through which it is sold bear the trade-mark, brand or name of the producer or distributor" that gasoline dispensed through service station pumps came under the protection of resale price maintenance acts. By amendment this year New Jersey joined the four states in amending its resale price law to include vending equipment. Almost simultaneously, New Jersey became the first state to enact a special law regulating the retail sale of motor fuels which prohibits sales below cost of the commodity plus expense of doing business, and sets up other regulatory measures covering under canopy discounts, rebates, misbranding and other marketing abuses.

Without exception all price maintenance laws are "vertical" rather than "horizontal" and throughout the acts this provision is found uniformly: "This act shall not apply to any contract or agreement between producers or between wholesalers or between retailers as to sale or resale prices."

Examples of state legislation prohibiting resale price maintenance are found in Alabama and Texas. There is also a question of validity of resale price maintenance laws in states which have constitutional prohibitions against price fixing combinations. For example, the constitution of the State of Washington provides that "no person . . . shall directly or indirectly combine to make any contract or in any manner whatever, for the purpose of fixing the price . . . of any product or commodity." If this be construed to prohibit resale price maintenance contracts, as seems possible, the Washington Fair Trade Act would seem to be ineffectual to legalize such contracts without constitutional amendment. Similar constitutional provisions are found in Utah and Wyoming among the states having fair trade acts on their statute books.

Despite the fact that only 5 of the 43 states with fair trade acts have made specific provision to protect gasoline and that one of these (Utah) is in doubt, the evident intention of the various acts is to extend the privilege of price maintenance to any commodity which is somehow closely identified with the producer or distributor.

There is nothing compulsory about any of the resale price maintenance acts so far as the producer or distributor is concerned. The decision to place dealers under price maintenance contracts rests entirely with the producer or distributor. Under this optional provision, there are several large distributors or producers in New Jersey, as one case in point, who have not placed their dealers under contract to maintain resale prices at any minimum standard. Some of the so-called major companies have not exercised their privileges under the New Jersey act and there are three or four independent distributors firmly entrenched with chains of retail outlets who have not and probably will not place their dealers under these contracts.

Filling barrels with motor oil

Loading tank-wagon

Furthermore, there are some variations in the contracts now existing between producers and their dealers permitting various degrees of price fluctuation. In all cases, the contracts are written on a minimum resale scale and are sufficiently elastic to meet varying conditions. It is evident, however, from the degree to which retail markets in New Jersey have stiffened since June 1 that even those suppliers and distributors who have declined to place their dealers under contracts are benefiting from the more stable conditions.

There are three types of provisions in general use in contractual relationship between producers or distributors of trade-marked products and retailers. The three types of provisions are:

1. An agreement that the buyer will not resell the commodity except at the price stipulated by the vendor.
2. An agreement that the buyer in selling to a dealer will require that he will not, in turn, resell except at the price stipulated by the seller.
3. An agreement that the seller will not sell the commodity without similar price restrictions.

In many states, however, the wording reads "at less than the minimum price stipulated by the seller." Contracts need not mention the price involved since this can be done by designation on invoices, separate notices or by marking the commodity.

Within the past two weeks, General Petroleum Corp. launched the resale price maintenance campaign among its dealers in California by a registered letter to its dealers. The letter read:

"Satisfactory sales of our gasoline can be accomplished only by the confident acceptance of our products by the purchasing public and the profitable conduct of our dealers' business. Any unauthorized or unethical reduction in the price of our gasoline has the effect of destroying this public confidence and reducing the dealers' profits.

The California Fair Trade Act provides that the producer of a commodity which bears his trade-mark, brand or name or the vending equipment of which bears his trade-mark, brand or name may stipulate the price at which such commodity shall be resold. This we have done. Deviation from such stipulated re-

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Cowley County, Kansas, Is Comeback With Deeper

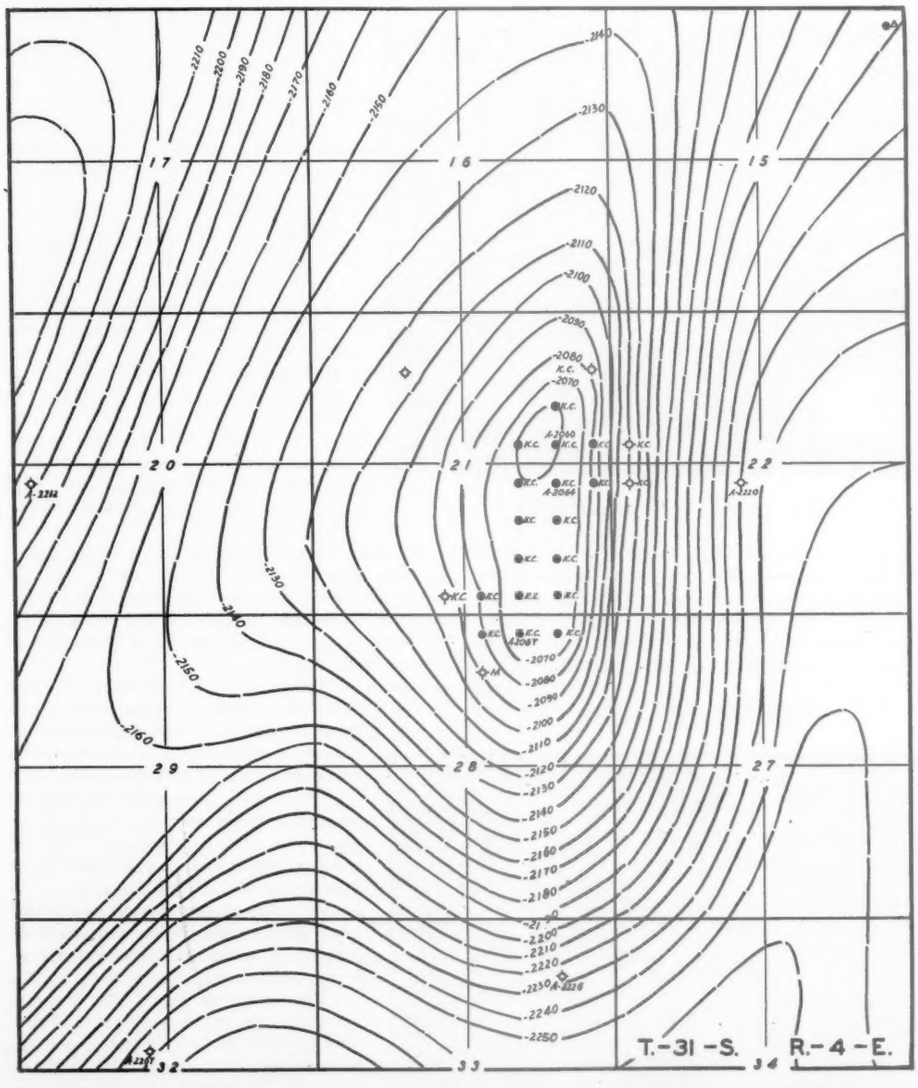
By DAL DALRYMPLE

The old adage that they never come back is being disproven constantly in the petroleum industry. Individually, oil men who win and then lose frequently beat back to even greater successes than they had known. So it is with producing areas. Great fields have declined and been classed as completely drilled up, only to come back with new discoveries.

Spindletop in Texas is an outstanding example. Oklahoma City was on the decline when the Capitol zone was discovered to give it new life. Bradford, one of the early Pennsylvania fields, yielded a new producing sector just a few months ago. The old Seminole-St. Louis district of Oklahoma recently was revived, several discoveries resulting. The K.M.A. field in Texas and the Illinois basin, current boom areas, had their first big activity years ago. There are others.

Consider Cowley County, Kansas. Several recent discoveries have given that old district new life, with further exploration almost certain to open additional producing areas.

Drilling operations were under way in Cowley County as far back as 1905, when gas was found near the town of Dexter. The first oil well west of the Flint Hills in Kansas was drilled near that town in 1914. Other discoveries followed and in 1926 total production of crude oil in Cowley County approached the 4,000,000-bbl. mark. Then the decline set in, the big play went elsewhere and other Kansas counties claimed the spotlight.



Hittle structure, Cowley County, Kansas. Datum, top of Arbuckle limestone. Contour interval 10 feet. Geology by Martin W. Baden, Winfield, Kans. Symbols: K. C., Kansas City lime; B., Bartlesville sand; M., Mississippian lime; A., Arbuckle limestone. *Surface map on page 81*

Undeserved Reputation

Many dry holes were drilled in Cowley County, giving it a black eye with wildcatters. The county was dubbed the "graveyard of wildcatters."

"It didn't deserve that designation," insists Martin W. Baden, oil operator and geologist of Winfield, who has made a thorough geologic study of the county and its formation through the years. "In the early days in Cowley County, wildcat operators assembled mammoth blocks of leases and drilled pasture locations, with little attempt to determine favorable locations. Naturally they drilled many dry holes, tests that may have been producers had they taken more time to study the country and make proper locations."

Developments in Cowley County in recent years have proved him right. A period of discovery that was given major impetus with the opening of the Weathered pool, the county's banner Arbuckle lime district, in August, 1935, followed by several lime and Bartlesville sand strikes in following months, was climaxed with three important developments in recent weeks.

First of these was the discovery of Arbuckle lime, or dolomite, production in the Hittle pool, north of Winfield. Originally mapped by Mr. Baden and developed initially by Trees Oil Co., it was opened in 1928 as a Kansas City lime pool. Largest production from that horizon was approximately 217 bbls., with at least half the wells producing from 100 to 200 bbls. daily. The Kansas City lime was topped at from 2,326 to 2,408 feet. Through 1936 it had yielded some 4,000 bbls. of oil to the acre, a figure that since has been increased somewhat.

After 10 Years

Ten years after opening of that pool, W. M. McKnabb and B. B. Blair, Winfield operators, went into that old area and drilled their No. 1 Hittle in SW SE NE section 21-31-4e, near the north end of the pool. They found Arbuckle dolomite at 3,280 feet, total depth 3,284 feet, and completed it last May as the pool's first producer from the deep zone. It pumped 203 bbls. of oil the first four hours, 216 bbls. the next four hour and made potential of 1,220 bbls.

The next Arbuckle producer was the Texas Co. No. 6 Hittle, NW NE SE section 21-31-4e, south offset to the discovery. It found top of the Arbuckle at 3,323½ feet, total depth 3,327 feet, and made potential of 2,454 bbls. of oil daily.

The third and last Arbuckle well to have been completed in the pool at this writing was Trees Oil Co. No. 3 Lewis, NE NW NE section 28-31-4e, one-half mile south of the Texas Co. producer. It

Staging Wells

Cowley County, Kansas—McKnabb & Blair No. 1 Hittle, Arbuckle discovery, in the foreground, recently was completed for potential of 1,220 bbls. of oil, reviving the old Hittle pool. Texas Co. No. 6 Hittle, in the distance, second Arbuckle well, was completed for 2,454 bbls. daily

was an old Kansas City lime well deepened from 2,427½ feet to Arbuckle horizon topped at 3,326 feet, total depth 3,328 feet, and completed for initial potential of 1,099 bbls.

Current activity in the field includes deepening of Texas Co. No. 1 Goodrich, SE SW SE section 21-31-4e; deepening of Trees Oil Co. No. 4 Lewis, NW NE NE section 28-31-4e, and a new test, Arthur Brewer Co. No. 1 Lewis, NW SE NE section 28-31-4e. The Texas Co.'s Goodrich property in SW SE section 28 originally was owned by Twin State Oil Co. and has three Kansas City lime wells on it.

Three Weathered Pays

The Weathered pool, in sections 28 and 33-31-3e and section 4-32-3e, the most recent pool to be developed to major importance in Cowley County, claimed attention anew a few weeks ago when big Mississippi lime production was discovered, giving that area its third producing horizon.

The pool was opened in August, 1935, at Lloyd, Frost & Study No. 1 Weathered, SW SE SE section 28-31-3e, which was completed for 606 bbls. of oil and 70 bbls. of water daily after acid treatment at 3,297 feet, total depth. Subsequent development was to the south and west, with 25 wells having been completed. Major pay horizon was Arbuckle dolomite, found approximately at 3,280-3,350 feet. Some of the Arbuckle wells have made potentials in excess of 3,600 bbls. daily, the largest producer being the Earl Wakefield No. 2-A Wilson, NE NE NW section 4-32-3e, completed for 3,642 bbls. of oil daily early last March.

Weathered was given its second producing zone late in 1937 when Kansas City lime production was found at the Wakefield No. 1 Wilson, NE NE NW section 4-32-3e, following completion of 17 Arbuckle producers. It had initial potential of 634 bbls. Another Kansas City producer made initial potential of 712 bbls. of 39-gravity oil. Top of the Kansas City horizon was found at approximately 3,280 feet. These wells are in the south part of the pool.

The field's third producing zone was found in July, 1938, when the Wakefield No. 3 Wilson, SE NE NW section 4-32-3e, uncovered big production in Mississippi lime at 3,150 feet, total depth. It had initial potential of 3,124 bbls. of oil and was given allowable of 250 bbls. daily by the corporation commission.

The Mississippi lime discovery is at the extreme south end of the field, which is situated on a north-south trending anticline that thus far has been proven two locations wide and more than 1 mile long. It has not been limited to the north or south, but dry holes have been drilled on the east and west sides.

Latest Cowley County strike was the extension of the Frog Hollow pool, east of Winfield. The extension was B. B. Blair No. 1 Dunlap, SW NW NE section 21-32-5e, which pushed the producing limits one-half mile eastward and one-fourth mile northward when completed the first week in August. It found Bartlesville sand at 3,042 feet, was bottomed at 3,062½ feet in sand and made initial potential of 352 bbls. of 40-gravity oil. Other new work in the area was under way.

Cowley County wells generally have long productive lives, the slow rate of drainage being particularly characteristic of sand wells. This was illustrated strikingly in the Fred Clarke pool, named after the old Pittsburgh Pirate manager, on whose farm the discovery well was drilled. The pool, in section 6-31-4e, was opened in 1916 with a Bartlesville sand producer. In the subsequent 20-year period ending in October, 1936, production had total more than 8,000 bbls. to the acre. A recent tabulation of total production of the three wells in the pool placed the figure at 300,000 bbls., coming from Bartlesville sand at an average depth of 2,840 feet. In March of this year the Arthur Brewer No. 1 Clark, NE SE NW section 6, was completed as a Bartlesville sand producer—some 26 years after the north offset had been completed as a producer from the same formation!

Other Bartlesville sand areas in Cowley County include the Smith-Shaffer pool in section 10-31-3e, opened in 1917; the Eastman pool, in sections 31-30-6e and 5 and 6-31-6e; Rainbow Bend pool, in sections 16, 17, 20, 21, 28 and 29-33-3e; and the Rock field in sections 10, 11, 14 and 15-30-4e, all discovered in 1923.

On the Granite Ridge

The Rainbow Bend pool was the first field of importance to be discovered on the Nemaha granite ridge between the Blackwell field in Kay County, Oklahoma, and the Augusta pool in Butler County, Kansas. Opened in December, 1923, it attained its peak production in 1925 with an average of 22,000 bbls. daily and at the end of that year had produced 4,000,000 bbls. of high-gravity oil. Since then it has produced another 5,000,000 bbls. of oil. The original geology was worked by Martin Baden, who also assembled the leases. Production comes from the sand at base of the Pennsylvanian and is controlled by distribution of a lens on the southeast flank of an anticlinal dome, trending north-northeast-south-southwest, and plunging toward the Blackwell structure. The sand varies in thickness from 5 to 50 feet, thinning to the northwest.

Arbuckle lime production was uncovered in 1924 in the Slick-Carson pool, section 19-32-3e, and in the Graham pool, sections 9 and 10-33-3e. The State School pool, located within the city of Winfield and directly northeast of the city, was opened in 1926 and produces partly from the Arbuckle horizon.

Fifty-one oil and gas pools have been opened in Cowley County, including more than 35 producing oil pools, several being of minor significance but some, such as Rainbow Bend and Weathered, ranking among the major fields of the state. One or more oil and gas fields have been found in almost every township in the county. The greatest concentration, however, occurs in the northwestern half of the county. Principal producing horizons are the Layton sand, Kansas City lime, Bartlesville sand, Mississippi lime and Arbuckle dolomite or limestone.

Productive Zones

Producing horizons include a shallow gas sand in the uppermost Pennsylvanian rocks; formations in the Shawnee group at depths in the neighborhood of 1,500 feet; formations in the Kansas City group at depths ranging from 1,900 feet in the eastern part of the county to 2,500 feet near Winfield; the Bartlesville sand, which produces at around 3,000 feet, and the Arbuckle zone. A relatively small amount of oil is obtained from Mississippi lime in eastern and southern Cowley County and—just recently—in the one big producer at Weathered, in the northwestern part of the county.

The Dexter gas field, in southeast-central Cowley County, was the scene of the discovery in 1908 of the first helium to be found in natural gas, from a well drilled in 1905. This gas runs about 2 per cent helium, with the balance mainly nitrogen. It is noninflammable. A plant was constructed in 1927 to extract helium. It has been intermittently in operation since that time.

Most of the oil and gas in Cowley County occurs on structural highs of some type, although some of the most pronounced folds produce little or none and some very productive pools appear to be largely independent of structural conditions and to be controlled by the porosity and extent of the reservoir bodies, according to N. W. Bass, geologist, writing in the State Geological Survey bulletin on "Geology of Cowley County, Kansas." Even a slight deviation from the regional monoclinal dip in the surface beds is worthy of a test well. Many successful oil and gas wells have been drilled where

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Oil Industry and Equipment Exports Top $200,000,000

NEW YORK. — The petroleum industry and its equipment suppliers exported more than $200,000,000 worth of commodities during the first half of 1938. According to the Bureau of Commerce the United States exported in the first five months $162,649,307 of petroleum products. In June, crude oil, motor fuel, gas oil and fuel oil and lubricating oil exports were valued at over $31,000,000. The June figures do not include grease, wax, kerosene, asphalt, coke and naphthas nearly sufficient to boost the half year total above $200,000,000.

Equipment manufacturers, including those making drilling and producing materials and refinery supplies, ship goods valued at about $3,000,000 to $6,000,000 per month. In June, exports of well and refining equipment were valued at $4,321,000 against $2,556,000 for June, 1937. Sale of American well and refinery equipment abroad, valued this year at nearly double the shipments in 1937, is indicative of the extent to which foreign oil operations are being pursued.

The accompanying table shows the values placed on petroleum and products exported in the first five months, preliminary figures on some of the more extensively traded products and six months' totals for those particular items.

By comparing values in the table with volume figures in The Oil and Gas Journal of July 21, the per barrel value can be established. For example: There were 32,753,000 bbls. of crude exported in the first five months valued at $48,183,011, or slightly more than $1.47 per barrel. Crude exports produce the greatest dollar value with motor fuel second and lubricating oil third. Gas oil and distillate fuel are the fourth with kerosene fifth. Petroleum and products exported in June amounted to 34.2 per cent of the total exports of all commodities, compared to 33 per cent in June, 1937.

(000's omitted)

	Five months	June	Total
Crude	48,183	10,987	59,170
Natural gasoline	5,126		
Bulk gasoline	36,675		
Container gasoline	3,661		
Total gasoline	45,463	8,811	54,274
Naphthas	1,330		
Benzol	710		
Mineral spirits	243		
Bulk kerosene	6,230		
Container kerosene	1,428		
Gas oil	18,903		
Residual fuel	4,818		
Total gas and residual	23,722	5,334	29,056
Red and pale oil	15,500		
Black oil	991		
Cylinder bright stock	6,115		
Steam refined cylinder oil	2,977		
Packaged lubes	277		
Other lubes	3,460		
Total lubricants	29,323	6,165	35,488
Insulating oil	133		
Lube grease	1,557		
Liquid gas	38		
Unrefined wax	657		
Refined wax	1,344		
Unmanufactured asphalt	326		
Manufactured asphalt	900		
Natural unmanufactured asphalt	237		
Natural manufactured asphalt	339		
Petroleum coke	477		
Total	162,649		

Texas Company Contests Labor Board Report

The Texas Co. will file contest of a labor board intermediate report which upheld charges made against the company in connection with organization of its employes at its Galena Park and Port Neches refineries. The report was made by Gustaf B. Erickson, trial examiner for the National Labor Relations Board following the hearing May 16 to 24. The charges filed by Local 367, International Oil Field Workers Union, asserted the company had blocked attempts to organize the union and had favored a company union.

Examiner Erickson ordered the company to post notice of its withdrawal of support of the Houston Works Employes Federation (the alleged company union), according to W. A. Combs, attorney for the union.

The company has issued the following statement:

"We do not believe that there is an adequate basis for the examiner's recommendation. Our employes are, and have been, free to join any labor organization they desire, and we believe that the hearing before Mr. Erickson clearly demonstrated this fact. The Houston Works Employes Federation is completely free from any domination, interference or support on the part of the company.

"While the examiner's recommendations are adverse to the company, his report makes the following statements, which generally set forth the company's labor policies and practices.

" 'Shortly after the inception of the (employes representation) plan the local management was on several occasions instructed by the general management and its officials that employes had a perfect right to join any organization of their choosing. Such instructions had been periodical down to the time of the hearing and transmitted on down to local supervisory officials and foremen.

" 'Employes were also so instructed. In April, 1934, over the signature of W. S. S. Rodgers, a letter was distributed to all employes containing the statement of the president of the United States of March 25, 1934, to the effect that Section 7 (a) of the NIRA gave groups the right to organize. In May of 1934 the management distributed another letter advising the employes that no matter what representatives they chose, their status with the company would not be changed. . . .

" 'The respondent made a full disclosure of all of its bargaining activities with labor organizations. Its officers as witnesses testified fully as to meetings held in Chicago and elsewhere, and its action throughout its entire jurisdiction relative to the negotiation of working agreements and its labor policy. It is very fully established that it was very much concerned over its employes that they should know their rights under the national labor relations act, and that no effort or expense should be spared to give its employes every opportunity to express themselves in the choice of a representative. . . .'

"It is our intention to file exceptions to the report with a view to obtaining a favorable decision from the board itself. If we are not successful in this, we expect to appeal to the United States Circuit Court of Appeals."

Humble Oil & Refining Increases Its Dividend

HOUSTON, Tex.—Humble Oil & Refining Co. will pay a dividend of 62½ cents a share on its common stock on October 1 to stockholders of record at 3 p.m. September 1, it was announced Monday following a meeting of the board of directors.

The company has 9,000,000 shares of common stock and the October dividend will mean a disbursement of $5,625,000.

Two More Crude Buyers Cut Takings in K.M.A. Field

FORT WORTH, Tex.—Two more crude oil purchasing companies in the K.M.A. field last week announced they would reduce their purchases by 25 per cent. These two companies were Continental Oil Co. and Sinclair Prairie Pipe Line Co. Other companies prorating purchases to 75 per cent of the well allowable are Magnolia Petroleum Co. and Texas Pipe Line Co., orders of all four companies being retroactive to August 1. Under present Railroad Commission proration orders the daily top allowable per well is 32 bbls. Thus pipe line proration reduces the daily output per well to 24 bbls. and on the basis of a seven-day week, to approximately 21 bbls. daily. The Continental Oil Co. proration orders also applied to the Bryson pool of Jack County, reducing takings there to 20 bbls. daily per well.

Despite the unhealthy condition in the K.M.A. field drilling operations for the past week showed no sign of letup, in fact there was a substantial increase in completions. Thirty completions were reported last week in contrast to 14 in the previous week, and from 18 to 26 in the few preceding weeks. Twenty-three new locations were made last week.

Gulf Storm Blows Down Score of Derricks

NEW ORLEANS, La., Aug. 15.—Damage in excess of $50,000 was caused to oil fields, crops and property in the 50-mile-an-hour gale which swept into southwest Louisiana last night from the Gulf of Mexico.

Oil field men in the Lake Charles and Cameron districts reported the destruction of more than a score of derricks. Among them were 13 derricks in the Lake Charles field of the Magnolia Petroleum Co., just south of the city; several in the Hackberry field; three of the Stanolind Oil & Gas Co.; one Magnolia derrick in the Iowa field; three of Union Sulphur Co., and one of Superior Oil Co. in the Marine field a mile offshore in the Gulf of Mexico.

Puterbaugh Companies Purchase McCamey Field Properties

FORT WORTH, Tex.—Oil companies headed by J. G. Puterbaugh, Oklahoma operator, have entered the McCamey field of Upton County through purchase of production and properties owned by Choate & Hogan, Midland partnership.

Under the transaction, McAlester Fuel Co. and Sylva Oil Co., Puterbaugh firms, jointly acquired 230 acres out of Section 7, M. S. Denton Survey, southwest extension area of the field, on which are six producers. Contract has been signed and transfer awaits confirmation of titles.

Terms of the deal are reported to have been $10,000 cash and $200,000 out of oil. The Puterbaugh companies plan extensive development for the area, which has seen the addition of several good producers in the past few months.

Pennsylvania Gasoline Tax Law Injunction Continued

HARRISBURG, Pa.—The Dauphin County Court has continued a restraining injunction against enforcement of the uniform gasoline tax law, pending disposition of three actions contesting its constitutionality.

Attorneys for the Firestone Tire & Rubber Co. of Akron, Ohio, joined with Atty. Gen. Guy K. Bard in requesting the court to continue a preliminary restraining order.

The gasoline law, enacted by the 1937 legislature, prevents retailers giving discounts from their posted price. The tire firm claims it suffered heavy losses, particularly in the Pittsburgh district, because it was unable to offer discounts to truckers and large users of gasoline.

Similar suits now pending were brought by William B. Brown, operator of service stations at Amity Hall and Dauphin, near Harrisburg, and by Sperry Hutchinson Co., stamp dealers.

Standard Sweepstakes

LOS ANGELES, Calif. — A crowd of over 8,000 Standard oil employes, their families and friends, descended on Santa Anita race track for the "Standard Sweepstakes," the name given to this year's get-together of Standard Oilers.

President W. H. Berg, Vice President R. K. Davies, and Director P. H. Patchin were among those present from San Francisco.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Much at Stake

It becomes increasingly apparent that those responsible for retail marketing practices in the oil business still have problems to solve. Scattered price wars in several of the larger consuming centers and secret practices involving rebates—another form of underselling—have cut into the industry's profits this year and if continued are a threat to the industry generally.

This bad condition was brought about by the actions of a very few. The great majority prefer to go along with their sources of supply, carrying on sales in a manner that protected producer, distributor and customer.

The application of the Fair Trade Practice laws presents a possible solution of this problem. Certainly they merit the trial now being given at several points.

There appears to be no fundamental reason why oil marketers should not have in the sale of branded products the same protection which is accorded to many sellers of products in other industries.

All these state laws are based on the obvious fact that a producer is entitled to protection in the sale of his branded products which have received customer acceptance based on quality.

In the oil business the refiners have spent millions of extra dollars a year in perfecting their gasoline and oil to the point where the consumer is assured of satisfactory performance whenever and wherever used. Many more millions have been spent in establishing these products with consumers and placing retail service at convenient points.

The producer knows what it costs to manufacture and retail these products through responsible dealers. The occasional price-cutter ignores all these factors and seeks to obtain an unwarranted advantage which, in the final analysis, is unfair to everyone concerned.

As one large marketer in California said:

"Satisfactory sales of our gasoline can be accomplished only by the confident acceptance of our products by the purchasing public and the profitable conduct of our dealers' business. Any unauthorized or unethical reduction in the price of our gasoline has the effect of destroying this public confidence and reducing the dealers' profits."

The entire oil industry has something at stake in this. It is no exaggeration to say that the conservation program of the federal and state governments will be threatened unless this situation in regard to marketing can be worked out satisfactorily.

The refiners cannot continue to pay existing prices for crude which have permitted the industry to operate on a basis which seeks to conserve crude oil—an irreplaceable natural resource—unless the jobbers and dealers can secure prices to which they are entitled, based on the cost of refining and distribution.

There is no matter of price control or violation of the antitrust act involved. All these laws seek to do is to give the producers greater control over their branded products which they have developed and established with the buying public. There is no agreement with other producers who can do as they see fit.

The sole purpose is to protect trade-mark owners, distributors and the public against injurious and uneconomic practices in distribution of articles of standard quality under a distinguishing trade-mark, brand or name.

Furthermore, if there is no protection to trademarked products the producers must drop out and join those who prefer to have their products sold without identification by them and also without guarantee as to quality. Instead of products being marked to invite public confidence there would be a mad scramble to sell on the one advantage of price, regardless of quality.

Programs and Meetings

A.C.S. Announces Program For Milwaukee Meeting

Petroleum chemists of England and Canada will participate in the sessions of the Division of Petroleum Chemistry of the American Chemical Society to be held in connection with the society's ninety-sixth meeting in Milwaukee, Wis., September 5 to 9.

More than 25 papers and addresses are scheduled, according to Dr. Jacque C. Morrell, associate director of research of the Universal Oil Products Co., chairman of the division.

Introduction of substitute motor fuels will be discussed as a feature paper.

Five representatives of the research department of the Anglo-Iranian Oil Co., Ltd., Sunbury-on-Thames, Middlesex, England, will take part in the discussions. They are S. F. Birch, A. E. Dunstan, F. A. Fidler, F B. Pim and T. Tait, who will present research on "The Production of High-Octane Isoparaffinic Fuels by the Addition of Olefines to Isoparaffins." Other papers include:

W. F. Seyer and Herman Nemetz, University of British Columbia, "The Vapor Pressure of the Cis and Trans Isomers of Decahydronaphthalene."

William Morris and Mr. Seyer, "The Density and Transaction Points of Dicetyl."

Dr. Gustav Egloff, Universal Oil Products Co., "The Motor Fuel Economy of Europe."

With Charles L. Thomas, and Doctor Morrell, Doctor Egloff will discuss "The Chemical Reactions of Cracked Residues."

Charles Wirth, III, C. D. Lowry, Jr., and J. H. Strong, Universal Oil Products Co., "Studies in Doctor Sweetening."

The Raman spectra of the nine heptanes and their use in the identification of heptanes in mixtures will be explained by E. J. Rosenbaum, of the University of Chicago, together with Dr. A. V. Grosse and H. F. Jacobson of the Universal Oil Products Co.

L. E. Hebl, T. B. Rendel, and F. L. Garton, Shell Petroleum Corp., will reveal a newly constructed ethyl fluid blending chart for motor method octane numbers which permits the "lead susceptibility of a gasoline to be expressed as a single figure."

J. W. Givens, Shell Development Co., Emeryville, Calif., "Effect of Pressure on Viscosity in Relation to Lubrication."

L. M. Henderson, W. B. Ross, and C. M. Ridgway, of the Pure Oil Co., "The Tetraethyl Lead Susceptibility of Gasolines Treated With Doctor Solution versus Caustic Washing."

George W. Ayers, Jr., and M. S. Agruss, Pure Oil Co., "Organic Sulfides: Specific Gravities and Refractive Indices."

B. L. Evering, Standard Oil Co. of Indiana, "The Thermal Decomposition of Petroleum Hydrocarbons Into Free Radicals."

E. W. Thiele, Standard Oil Co. of Indiana, "The Relation Between Catalytic Activity and Size of Particles."

Donald L. Katz and William Saltman, University of Michigan, "Surface Tension of Ethane, Propane and N-butane."

Ogden Fitzsimons, R. G. Capell, and G. C. Jones, of the Floridin Co., "Bauxite As an Adsorbent for Pennsylvania Oils."

Francis G. Graves, Standard Oil Co. of California, "Some Factors Affecting the Knock Rating and Lead Susceptibility of Gasolines."

Bruce B. Farrington and Robert L. Humphreys, Standard Oil Co. of California, "The Effect of Pressure on Lubricating Greases."

W. J. Finn, R. J. Harrington, and Gus Kaufman, of the Texas Co., "Miniature Penetrometer for Determining the Consistency of Lubricating Greases."

Harry Levin and Charles C. Towne, Texas Co., "The Determination of Undissolved Sludge in Used Oils."

Frank W. Hall, Wallace A. McMillan and Mr. Levin, all of the Texas Co., "The Determination of Dissolved Sludge in Used Oils."

R. H. Gardner, John W. Teter, and L. I. Hanson, Sinclair Refining Co., "Chloro-Organic Compounds in Relation to Cracking Coil Corrosion."

R. D. Pinkerton, A. K. Roebuck, and S. J. Wayo, Sinclair Refining Co., "The Determination of Gasoline Unsaturation by Vapor Phase Hydrogenation."

Prof. Emma P. Carr, Mount Holyoke College, winner of the Francis P. Garvan Gold Medal for distinguished service in chemistry, and Miss Hildegard Stucklen will present a paper on "The Ultra-Violet Absorption Spectra of Simple Hydrocarbons."

R. T. Leslie, U. S. Bureau of Standards, and W. W. Heuer, research associate at the bureau representing the A.P.I., "Systematic Distillation of a Dewaxed Lubricant Fraction of a Mid-Continent Petroleum Preliminary to Isolating Its Constituents," and "A Continuous High-Vacuum Still and Apparatus for Determining Boiling Points at Low Pressures."

Beveridge J. Mair and Charles B. Willingham, Bureau of Standards, "Exhaustive Fractionation by Distillation and Extraction of the 'Extract' Portion of the Lubricant Fraction From a Mid-Continent Petroleum." With Anton J. Streiff, they will take the topics, "The Hydrogenation of Fractions Prepared by Extensive Separation of the 'Extract' Portion of the Lubricant Fraction From a Mid-Continent Petroleum," and "The Chemical Constitution and Physical Properties of the 'Extract' Portion of the Lubricant Fraction From a Mid-Continent Petroleum."

Regional Technical Meetings Of W.P.R.A. Announced

Refining economics will be treated in the two regional technical meetings of the Manufacturing Committee of the Western Petroleum Refiners Association to be held in Wichita, Kans., and Shreveport, La., this fall, according to the announcement by L. D. Mann, chairman of the Manufacturing Committee.

The Wichita meeting has been scheduled for September 29 at the Allis Hotel, and the Shreveport meeting will be October 28 at the Washington-Youree Hotel. While the programs are not complete the following authors and papers will appear:

Dr. Gusav Egloff and George B. Murphy, Universal Oil Products Co., "Economic Comparison of Cracking to Fuel Oil Versus Coke."

Henry W. Boggess, Sinclair Prairie Oil Co., "Safety in Its Economic Relation to the Refiner."

"Furnace Walls and Arches," by the M. H. Detrich Co.

W. W. Scheumann, Cities Service Oil Co., "Demands on the Refining Industry by the Modern Automobile Engine."

CALENDAR

August

31-Sept. 3—SPOKANE, Wash., Pacific Coast meeting American Institute of Electrical Engineers.

September

5-9—MILWAUKEE, American Chemical Society.

8—LOUISVILLE, Ky., Petroleum Marketers Association, annual fall conference, Brown Hotel.

14-16—ATLANTIC CITY, N. J., National Petroleum Association, annual meeting, Hotel Traymore.

14-16—SANTA BARBARA, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

21-23—CLEVELAND, Ohio, National Industrial Advertising Association, Inc., annual meeting.

27-29—ST. LOUIS, Mo., National Association of Petroleum Retailers, annual meeting.

27-Oct. 2—EL PASO, Tex., midyear meeting American Association of Petroleum Geologists, under direction of West Texas Geological Society.

October

3-4—CHICAGO, National Lubricating Grease Institute, sixth annual meeting.

5-6—YOUNGSTOWN, Ohio, Ohio Petroleum Marketers Association, fall conference, Ohio Hotel.

5-7—SAN ANTONIO, Tex., fall meeting petroleum division A.I.M.E.

6-7—TULSA, Society of Automotive Engineers, National Regional Fuels and Lubricants meeting.

6-8—KNOXVILLE, Tenn., fall meeting of industrial minerals division of A.I.M.E.

10-13—BILOXI, Miss., Montana National Bituminous Conference, Edgewater Gulf Hotel, under the sponsorship of W.P.R.A. and Montana and Mississippi Highway Departments.

10-14—ATLANTIC CITY, N. J., American Gas Association Annual Convention.

10-14—TULSA, North American Gasoline Tax Conference.

10-14—CHICAGO, National Safety Congress, Stevens Hotel.

12-13—INDIANAPOLIS, Ind., Indiana Independent Petroleum Association, Hotel Severin.

13-15—LOS ANGELES, Calif., Society of Automotive Engineers, Aircraft Production meeting, Ambassador Hotel.

18—TULSA, annual meeting of National Stripper Well Association.

19-21—TULSA, I.P.A.A.

20-21—LOS ANGELES, Calif., industrial minerals division and petroleum division of A.I.M.E.

24-26—INDIANAPOLIS, Ind., National Association of Credit Men, Petroleum Refiners Division.

26—OLEAN, N. Y., National Petroleum Association, Department of Fire and Accident Prevention.

27-29—SAN ANTONIO, Tex., annual meeting, Texas Mid-Continent Oil and Gas Association.

November

1—NEW YORK, Oil Trades Association of New York, annual banquet, Waldorf-Astoria Hotel.

1-5—TUCSON, Ariz., regional meeting A.I.M.E.

3-4—LOS ANGELES, Calif., American Association of Petroleum Geologists, Pacific Section.

11-17—NEW YORK, National Motor Truck Show.

11-18—NEW YORK, National Automobile Show.

14—NEW YORK, S.A.E., Commodore Hotel.

14-18—CHICAGO, A.P.I. nineteenth annual meeting, Stevens Hotel.

December

5-9—NEW YORK, A.I.M.E., annual meeting.

6-8—OMAHA, Nebraska Petroleum Marketers.

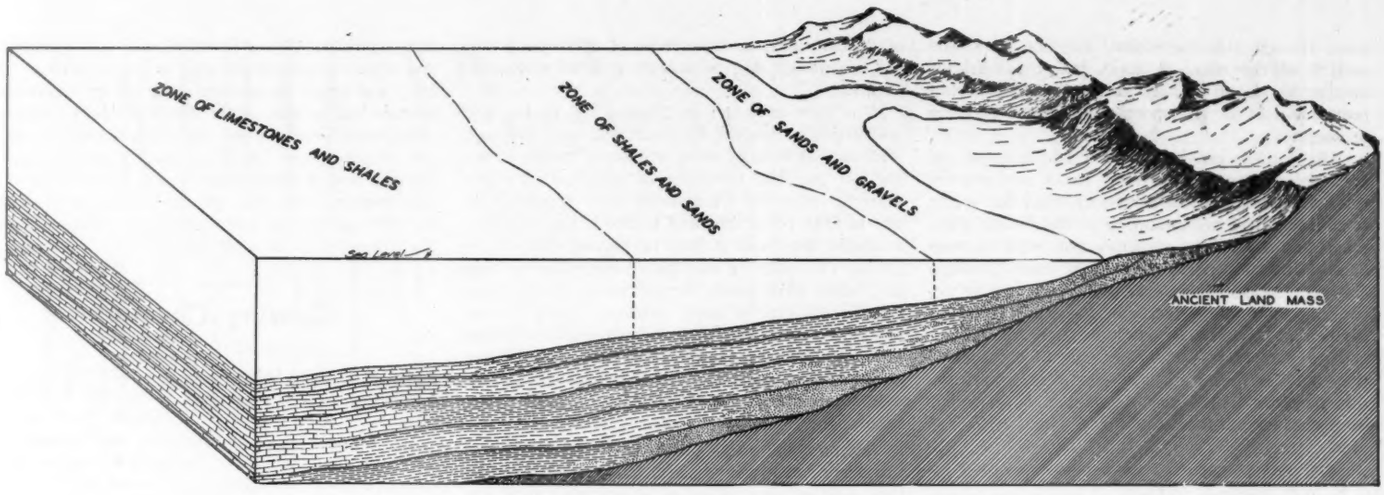
1939

April

24-29—HOUSTON, Tex., Oil-World Exposition.

May

—— TULSA, Natural Gasoline Association of America.



Sediments have accumulated in ancient seas and now form reservoirs for oil and gas

Gas and Oil Accumulate in the Pore Space in Sedimentaries

By L. G. E. BIGNELL

Most reservoirs containing crude oil and natural gas are in sedimentary rocks. Some oil pools have been found in igneous rocks but the oil has apparently migrated there from sedimentary source beds. Sedimentary rocks are those which have resulted from the accumulation of products of destruction of other rocks. Sedimentary beds will vary with the type of rocks from which they have been derived, the topographic relief of the region where the parent rocks exist, the distance between places of deposition and places where sediments were formed. the methods by which the rocks are destroyed. the time intervening between the production of the sediments and their deposition and the climatic and other conditions from the regions of rock destruction to those of deposition.

The rocks of the earth's crust fall into two groups—igneous and sedimentary, according to Dr. William H. Twenhofel of the department of geology and geography, University of Wisconsin. Madison, Wis. The igneous rocks have solidified from a liquid state; the sedimentary rocks have resulted from the integration of the products of destruction of other rocks. According to F. W. Clarke and H. S. Washington the rocks of the lithosphere are 95 per cent igneous and 5 per cent sedimentary, the latter being estimated by weight as 82 per cent shale, 12 per cent sandstone and 6 per cent limestone. It has been estimated that 75 per cent of the earth surface is underlain by sedimentary rocks and 25 per cent by igneous rocks. It is not unlikely that the average has approximated those figures throughout much of geologic time.

Sedimentary rocks were first derived from destruction of igneous rocks but other sedimentary rocks have since been made by the reworking of older sedimentaries. Nature is constantly creating new sedimentary rocks by the destruction of older land masses and this process has been going on since the beginning of Paleozoic time. It is estimated that about 41 per cent of the life of the earth is represented by the geologic eras since Paleozoic time began or about 553,000,000 years have elapsed since the first sedimentary rocks were formed by destruction of igneous rocks.

GEOLOGIC SOCIETY OF AMERICA COMMITTEE ON THE MEASUREMENT OF GEOLOGIC TIME

Customary division and oregeny:	Time Scale Schurchart & Dunbar D. White N.R.C. Bull.80 Age in m.y.*	—7.9 (10)
Post Glacial	...	....
Pleistocene	...	....
Pliocene	..	....
Miocene	25	....
Oligocene	.	....
Eocene	35	60
Cretaceous	50	....
Nevadan	30	140
Jurassic	35	175
Triassic	25	200
Appalachian		....
Permian	40	240
Pennsylvanian	40	280
Mississippian	30	.
Devonian	40	350
Silurian	30	380
Ordovician	70	450
Cambrian	90	540
Upper Preterozoic	..	640
M. Pr. Cobalt	160	800
Algoman	60	860
L. Pr. Bruce?	140	1000
Laurentian	250	1250
Keewatin	250	1500

*Millions of years.

Rock destruction is accomplished in many ways. Large masses may be broken from the parent rock and then these large pieces worn down to fine sand and silt. Temperature change plays an important part in rock destruction. Water enters the cracks, fissures and pores of the rock and freezes. As the ice is formed the cracks are opened until the piece is pryed away from the larger mass of rock. Along sea coasts the wearing action of waves beating against the base of rock cliffs will undermine and eventually release large sections of rock. This is especially true where softer strata underlie the harder rocks.

Vegetation plays an important part in the breaking up of rocks. The roots of plants and trees grow into small openings in rocks and as they increase in size tend to break the rock into smaller pieces. The same general process is followed by the growth of minerals. Waters carrying solids in suspense or in solution will enter fissures and pores in rocks and with the decrease in current velocity and the cooling of the water the solids are precipitated and as they grow they will force the rocks apart.

Mass destruction of parent rocks is accomplished by earth crustal movements. The sinking of one part of the surface and the lifting of another part will throw strains upon intervening areas and rocks will be broken and crushed. Weathering and attrition due to movement of water and solids over large broken pieces of rock will in time wear them down to small fragments. Large rocks rolling over smaller ones will crush and grind and serve as an agency for rock destruction. Rocks sliding over surfaces as they move down hill have an abrasive effect and will crush the stones into fine particles. Another means of breaking rocks is due to impact of one mass against another such as occurs when pieces of rock are dislodged and fall.

Glaciers, ancient and modern, play an important part in breaking up rock masses and also in transporting the crushed materials. As the glacier moves downward it will crush and gouge a channel for itself out of the solid rock and

even though the movement may be slow the weight of the mass is great and the work of destruction is an important factor in preparing rock material for transportation and the forming of sediments.

All of these and many other forces break up both igneous and sedimentary rocks and prepare the material to be transported by wind and water to places where accumulation of the debris takes place and nature again starts the slow process of forming new rocks out of old ones. Streams carry in suspense materials of varying size depending upon the velocity of the water. During periods of flood large boulders may be moved and on the other end of the scale of transportation will be found the movement of extremely fine particles which may be held in suspense in comparatively still water for a long period of time.

Materials transported have been classified by C. K. Wentworth as follows:

	mm.
Boulder	256 or above
Cobble	64-256
Pebble	4-64
Granule	2-4
Very coarse sand grain	1-2
Coarse sand grain	½-1
Medium sand grain	¼-½
Fine sand grain	⅛-¼
Very fine sand grain	1/256-⅛
Silt particle	1/256-1/512
Clay particle	Smaller than 1/256

The transportation of rock fragments by rain wash has played an important part in the formation of sediments. While the rate of movement will vary through wide ranges practically all streams carry some sediment in suspense and most waters carry elements in solution. Both characters of rock material play an important part in the rebuilding of rocks and have done so through long geological periods of time. While it is known that this is an important process in forming sedimentary rocks it is not possible to determine the rate at which the rocks are formed because rocks of practically the same character may be formed in widely different time intervals.

In addition to the sedimentary rocks formed through the mechanical transportation of rock debris which represents probably 90 per cent of the sedimentary section there is a second type of sedimentary rock formed by biochemical reactions. The limestones represent this class of sediment and they are found in all parts of the world. This type of rock is precipitated from solution in the sea due to the mechanism of photosynthesis. This may be illustrated by considering land plants which are green because of the presence in the plant tissues of chlorophyl and the manufacture of carbohydrates (starch etc.) in the growing plants is due to intake of carbon dioxide from the atmosphere, then, in conjunction with the water in the plant, the chlorophyl and the energy of sunlight, the carbohydrates are manufactured and this same phenomenon takes place in the seas that contain thousands of tons of green floating types of plants and here is where limestone enters the picture. The constituents of limestone are carried to the seas in solution in the form of calcium bicarbonate ($CaHCO_3$)—the result of carbon dioxide and water dissolving the limestone on land. This equilibrium of calcium carbonate, carbon dioxide and water can be illustrated by

$$CaHCO_3\ CaCO_3 + CO_2 + \text{Water}.$$

As the intake of carbon dioxide by the green floating life of the sea takes place through absorption from the sea water the above equilibrium is disturbed and the chemical equivalent amount of calcium carbonate is precipitated in the form of mud. This process seems best to explain the formation of most of the limestones. There are also some mechanically formed limestones due to the weathering agents that reworked the limestones and transported the particles to new places of deposit, and the limestones of reefs and atolls are essentially due to animal growth known as corals.

The rate at which sediments fill basins and low places in the earth's crust will vary through wide ranges because there are many factors entering into the final formation of sedimentary rocks. Material may be transported and deposited in one locality for a time and before it becomes consolidated into rock it may be moved many more times. This shifting may be accomplished by tide and wave movements in the water or by wind movements on the land. Sediments may be deposited in water and later the water drained away and they become land masses and as such are worked upon again by the elements such as rain and wind. These cycles may be repeated many times.

Sedimentary rocks play an important part in the accumulation of natural gas and oil because they contain pore spaces in which these elements may be collected. Source beds are also sedimentary in character. They may be adjacent to reservoir rocks or the gas and oil may migrate some distance to find final lodgment in the rock pores. As these hydrocarbons are lighter than water and always tend to seek the upper part of the structure the movement of gas and oil is always upward. The strata may be tilted in one direction during one geologic age and in a reverse direction at another time and in this manner the gas and oil will move through the formations seeking the high places. Regional dip of formations is not always in the same direction for the several strata and it is known there may be many directions of dip in a series of formations beneath the surface of the ground. This presents many interesting problems for the geologist to study because surface evidence does not always reflect all underground conditions.

Formation of Sediments

Sediments are formed into many different type structures. They may be folded into anticlines and synclines, they may take the shape of terraces or noses, they may be broken and displaced by faults or the rate of regional dip of the formations may cause structural change in the strata to make for reservoir conditions.

The sand grains making up sandstones are sorted into place by classification through water movements. They may be packed closely and later cemented by the deposition of other elements precipitated out of waters moving through the pores in the rocks. In this way secondary deposition may cause the sandstones to have very different texture in different areas even though the sand has all come from one original source. Mineralization of sandstones may also follow deposition and change the rock texture.

Limestones are subject to leaching by the removal of soluble materials as ground waters move downward. In this way pores are made in the limestone and these may be later filled with gas and oil. The pores in limestone vary through a wide range in size and they may be continuous or broken. This irregularity in the arrangement of pore space in limestones has led to the practice of treating them with hydrochloric acid to increase the rate of flow of wells drilled into this type reservoir. The size of the passage ways are enlarged and in some instances barriers are dissolved permitting freer movement of the gas and oil toward the well bore.

Study of conditions under which sedimentary rocks were formed in past geological ages will give clews to probable location of suitable reservoirs for the accumulation of gas and oil. Old shore lines can be traced and it is logical to assume that along them will be found many new oil fields similar to many that have already been discovered. The environments surrounding shore line deposits are very favorable for the formation and accumulation of gas and oil. It is difficult to trace old shore lines deeply buried by following surface indications. It is also difficult to secure subsurface evidence of such conditions by the use of geophysics. However, using geology, geophysics and drilling exploratory wells in favorable regions will lead to the outlining of subsurface conditions and ultimately bring about the discovery of new oil pools.

Cowley County

(Continued from Page 27)

structure-contour maps of the surface rocks, using a contour interval of 10 feet, show only a nose—that, is not even a closure of 10 feet. Fields such as the Eastman, Rock and Rainbow Bend appear to be, in the main, defined by the porosity and lensing out of reservoir sand bodies, although the accumulation of oil and gas in these localities may be dependent in a broad way upon the attitude of the beds.

A revival of oil prospecting and development in Cowley County, in common with several other eastern and southeastern Kansas counties, has been under way in the past two or three years; but unlike the earlier activity, the main objective has been lime production. This is not because of loss of prestige of the shallow sands, for productive records made by the sands speak for themselves.

But the big lime play is largely a development of more recent years, coming with the development of acid treatment. In the old days, only good naturally producing lime wells were "pay." But since acidization of lime horizons came into vogue a few years ago production from lime wells has greatly increased. New operators are leasing around old lime wells or wells that had good showings in the lime before the days of acid, and in many instances have developed extremely profitable oil fields.

Accordingly, the search for lime production in Cowley County has increased in recent years—and the recent discoveries give added incentive for further exploration.

Geologists say and operators believe many more oil pools will be discovered in Cowley County, new producing horizons will be found in many of the old areas and some of them will be extended by operations of the future.

Only one thing is holding back activity in Cowley County right now, and that is the same thing that has caused field operations throughout the state to drop off this year: Lack of market for the crude oil. When the market for Kansas oil justifies the development, then there will be a large increase in drilling activity in Cowley County, operators active in and familiar with that area declare.

Shipment of Oil Burners Off During First Half

NEW YORK, Aug. 16.—Shipments of both distillate and fuel oil burners spurted in June over May's record, but totals for the first six months of 1938 are only slightly more than 50 per cent of what they were for the first half of 1937.

According to the Bureau of Census, Department of Commerce, distillate oil burner shipments in June totaled 15,018 units compared to 13,611 for the preceeding month. For June, 1937, distillate burner shipments totaled 23,495. During the first half of 1938, distillate oil burner shipments totaled 60,988 units, compared to 110,300 for the same period in 1937 and with 67,104 units for the first half of 1936. Oil burner shipments, including apparatus for burning No. 1 standard grade oil or heavier, totaled 9,550 units in June, compared to 8,732 in May, but fell short of the 14,724 units shipped in the same month last year. For the first six months, oil burner shipments totaled 45,343 units this year compared to 77,342 for the same time in 1937 and with 61,252 units in the first half of 1936.

STATE CAPITALS

LOUISIANA

THE CONSERVATION COMMISSION of Louisiana heard arguments on Friday, August 12, on the question of spacing regulations for the new basal Glen Rose lime field on the outskirts of Shreveport and the operators were told that a temporary ruling would be made public in a few days. The field was opened by R. E. Allison No. 1 Ellerbee, in Section 27-18n-14w in Caddo Parish. Following the completion of the well which flowed 499 bbls. in 24 hours through a quarter-inch choke, the Shreveport office of the commission recommended a 40-acre spacing rule in line with its handling of similar fields producing from the same horizon. This caused much objection from real estate men and some others, who demanded a 10-acre spacing rule outside the city limits and close spacing rules within the city.

A Shreveport delegation at the hearing requested the commission to withhold spacing regulations and first allow drilling of a number of wells in order to determine the extent of the producing area.

In the event the conservation department decided to order spacing immediately, it was suggested that one well be allowed to every 10 acres outside the city limits, and one well for every city block within the city.

The discovery well has been shut in, due to lack of outlet for its crude, but it now seems assured of a purchaser. The Atlas Pipe Line Co. of Shreveport is rigging up an old 4-inch line running from the area of the well to the company's refinery at Jewella, in order to examine its condition. Reports are Atlas will definitely purchase the crude, and it is determining whether this old line will be used or a new line laid.

TEXAS

QUESTION of the state returning to a two-day shutdown during September is expected to be the chief topic when the Railroad Commission receives testimony on which to base the September allowable at Austin on August 19. Some observers expressed opinion that a five-day producing week would be restored during September since the August order carried a continuation of Sunday shutdowns and reduced allowables of all wells, except those in East Texas, 2 per cent under the July figures. Others felt the one-day shutdown would be continued, due to continued withdrawals of crude from storage under a six-day production schedule.

Commissioner Lon Smith last week stated he will no longer oppose the Sunday shutdown, although he still favors some other method of allocation that will permit wells to produce throughout the week. In earlier statements he pointed out the shutdowns might injure some wells and some labor might be discharged.

TWENTY-ACRE SPACING for wells in the Hamman field, Matagorda County, was provided in an order issued by the commission last week, thereby allowing drilling of wells 466 feet from lease lines and 933 feet apart. The rule requires 1,200 feet of surface casing cemented to the surface and an oil string set with a minimum of 500 sacks. A 5,000-pound bradenhead and a 6,000-pound back-pressure valve must be installed above the kelly when drilling below the surface casing due to high pressures. Well-head and christmas-tree fittings must be 10,000-pound test for producers below 8,500 feet and 6,000-pound test fittings are required on the shallower wells. Proration is on the basis of acreage and per well, with 50 per cent of the allowable assigned on each factor. Proration may include as much as 30 acres.

NOTICE OF HEARING on the Knight area of southern Young County and on the L. G. Bennett area, H.&T.C. Survey, Fisher County, were set by the commission for August 23 at Austin. At that time the commission will hear testimony for determining whether special rules, regulations and orders shall be adopted for the prevention of waste.

OKLAHOMA

OKLAHOMA TAX COMMISSION calls attention to the decline in gross production taxes in July, and the "continued loss of market for Oklahoma crude oil, which bodes ill for the general revenue fund." The commission reports that collection of all taxes for July, the first month of the fiscal year, dropped $895,245.91, or 17.23 per cent, under the receipts for July, 1937, and that gross production taxes fell off $464,928.87, or 34.93 per cent under the same period last year.

KANSAS

THE KANSAS CORPORATION COMMISSION will hold a hearing on August 23 in the Allis Hotel in Wichita to decide on the allowable production of crude oil in the state in September, and to ascertain the market demand for gas from the Otis field in Rush and Barton counties and the Burrton field in Reno County.

THE COMMISSION ESTABLISHED a uniform method of taking potentials of wells in the Zenith pool in Stafford County. Operators in the field have been ordered to take new potentials based on the order, which requires wells in the field to be tested through tubing not more than 3 inches in diameter. Bottom-hole gas pressures will be included in determining well output.

VICKERS PETROLEUM CO. has asked that its No. 1 Roesler in Section 5-18-10w, Rice County, be located in a separate pool from the Stumps pool, now known as the Habiger pool, and this will be considered at a hearing on August 23.

IN THE MATTER OF THE APPLICATION of Indian Territory Illuminating Oil Co. for an order establishing a separate common source of supply of crude oil to be known as the West Stoltenberg or Colonial Hagy pool, and setting up development and proration units, a commission hearing has been set for 10 a.m. September 8 in Wichita.

WYOMING

THE CONSTRUCTION OF AN OIL PIPE LINE from the Lance Creek, Wyoming, field to Denver, Colo., has called forth a demand for a special session of the Wyoming legislature to enact legislation to halt the work on the line and to establish a severance tax on oil taken out of Wyoming to be processed. The movement was started by the Casper Trades and Labor Assembly, and was prompted by the thought of labor leaders that Wyoming would suffer a possible loss in the labor opportunity of refinery workers.

CALIFORNIA

REDUCTION IN ALLOWABLE production from 500 bbls. per day to 400 bbls. for all wells in the Wilmington field of Los Angeles Basin as was proposed early this week has been delayed due to refusal of two operators and one lessor to sanction the projected reduction. One of the protestants reserved judgment for one week and it is possible that some constructive action will be undertaken within another week.

Reed Bush, state oil and gas supervisor, attended a meeting held in Long Beach and practically served an ultimatum to the Long Beach Harbor Commission that unless it sanctioned the proposed reduction which most operators favor he would recommend enforcement of the state gas waste act.

Acme

State capitol, Austin, Texas

Fair Trade Act

(Continued from Page 25)

tail price constitutes a violation of the act. In order that we may comply with the law, insure consumer confidence and return our dealers a profit, this company's policy requires that our gasolines be sold at the retail prices we have stipulated and published."

The General Petroleum letter was accepted in the East and elsewhere as a hint that Pacific Coast suppliers intend to tolerate no deviation from the minimum price schedules established.

One of the factors preventing the New Jersey Fair Trade Act from being fully effective is inability to cover third-grade gasoline by the contracts. The law regulating motor fuel retail sales in New Jersey provides that pumps through which unbranded gasoline is dispensed must be marked "No Brand." Since few, if any, companies have established a trademark or brand for their inferior gasoline it is obviously impossible to cover this class of commodity in the minimum price agreements between the producer or distributor and resale dealer. In many instances the third-grade requirements are procured in the open market from a variety of sources.

In connection with the various fair trade acts is the so-called Miller-Tydings Act which legalizes resale price maintenance agreements in interstate sales when the commodity is to be resold in a state in which contracts are lawful. The act is actually an amendment to Section 1 of the Sherman Antitrust Act and legalizes resale price maintenance contracts or agreements in interstate commerce only when the commodity is to be resold in a state where such contracts are valid under state law. It is interesting to note that resale price maintenance contracts might be imposed by a Texas refiner on a New Jersey dealer, but conversely it would be considered a violation of the Sherman act as well as the Texas antitrust laws for a New Jersey refiner to impose the same restrictions on a Texas dealer.

Socony-Vacuum Oil Co., Inc., has announced that, beginning August 2, contracts will be signed with a number of its dealers in New York, Kings, Bronx and Queens counties, New York, which will prevent the sale of the company's branded gasolines in those areas at less than a minimum retail price. This action is taken under the Feld-Crawford Fair Trade Act designed "to protect trade-mark owners, distributors and the public against injurious and uneconomic practices in the distribution of articles of standard quality under a distinguished trade-mark, brand or name."

"The application of the Feld-Crawford act to the company's branded gasolines has met with the general approval of its dealers in the four counties. Conditions in these gasoline markets are so chaotic as to jeopardize both the company's trade-mark goodwill and the interests of the consumer in the economic and efficient handling of branded gasolines.

"The company regards the invoking of the act in the four counties as an experiment and has reached no decision as to whether it will seek to invoke it also for its branded gasolines in other areas."

Southern Illinois

(Continued from Page 21)

compared to the existing transportation costs from Mid-Continent points.

This comparison should also include the lower production costs of the Illinois area. While the writer does not have cost data on Illinois operations which are conclusive, it is certain the relatively shallow depths, low cost of early leases and other economies in operation mean that production costs in the new fields are substantially below most of the new producing pools in other parts of the country.

That there is plenty of room for expansion is revealed by the latest Bureau of Mines report, which shows that the refineries in this area, which includes Michigan, Indiana, Illinois, Kentucky and part of Ohio, are now refining 430,000 bbls. of crude oil daily. Less than 150,000 bbls. daily of this total comes from fields producing within this area, the remainder representing pipe line shipments from fields in the Mid-Continent, principally Oklahoma and Kansas.

The transportation advantage applying to shipments of refined products from refineries located within or adjacent to the Southern Illinois development is even more outstanding than in the case of pipe line shipments of crude oil. This can be best shown by the following table which gives comparative rail rates on shipments of gasoline and other light oils and heavy fuels from Oklahoma and from Robinson and Centralia, Ill., in the field:

Gasoline

	From Oklahoma Group 3		From Robinson, Ill.		From Centralia, Ill.	
To—	(1)	(2)	(1)	(2)	(1)	(2)
Chicago	40	2.64	18	1.119	19	1.254
Terre Haute	46	3.03	14	.92	20	1.32
Indianapolis	48	3.17	19	1.25	23	1.518
Springfield, Ill.	39	2.57	14	.92	14	.92

Fuel Oil

	(3)	(4)	(3)	(4)	(3)	(4)
Chicago	32	99.54	13	40.32	15	46.62
Terre Haute	37	$1.1508	12	37.38	20	62.16
Indianapolis	39	$1.2138	17	52.92	23	71.48
Springfield, Ill.	31	96.18	11	34.02	11	34.02

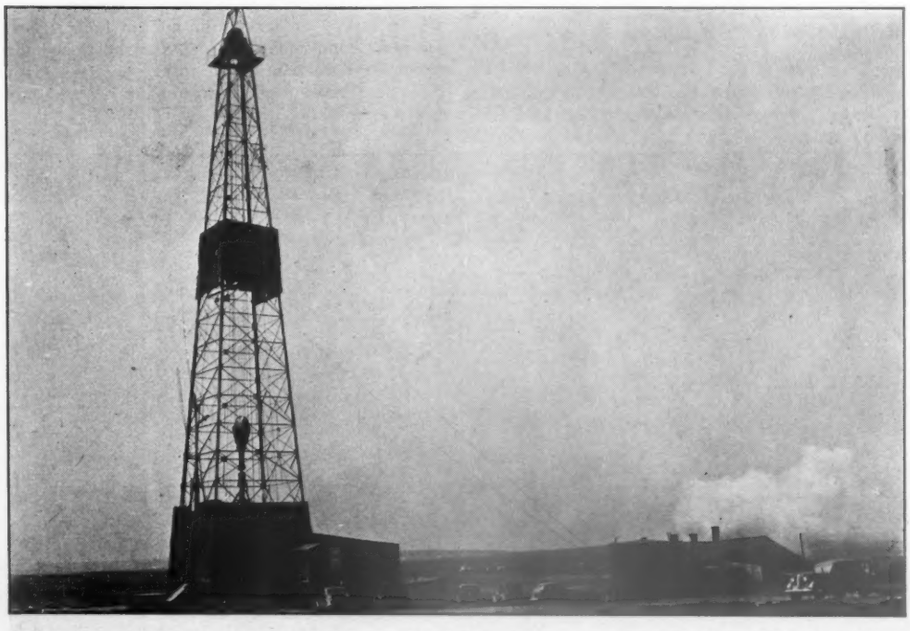
(1) Cents per 100 pounds. (2) Cents per gallon.
(3) Cents per 100 pounds. (4) Cents per barrel.
Gasoline rates apply to kerosene and distillates.

This table reveals how much closer the refinery in the Southern Illinois field is to important consuming centers, a situation reflected directly in transportation costs.

This in effect means that a refiner in southern Illinois is able to absorb a large part of his freight rate advantage over Oklahoma and other Mid-Continent refiners in sales within a radius of 300 miles to the north and east and shorter distances to the south and west. The freight saving, for example, in shipments of gasoline, kerosene, distillates and heavy fuels obtained from a barrel of crude to Indianapolis over Oklahoma (Group 3) amounts to approximately 62 cents per barrel.

The savings in the case of tank-wagon or short rail movements within a radius of 50 miles from the Illinois pools would range up to $1 per barrel compared to the long rail hauls from the Mid-Continent. Most of the new Illinois crude ranges from 37 to 39 gravity and in a combination skimming and cracking operation, the same yields of finished products are obtained as from a Mid-Continent crude of the same gravity with practically the same operating costs.

FIRST 10,000 FOOT WELL IN ROCKY MOUNTAIN AREA



California Co. No. 1 Kamp, Section 3-154n-96w, Williams County, North Dakota, drilling at 10,160 feet

VENEZUELA TREATY

(Continued from Page 23)

also increased although not in a parallel ratio. Today these imports, in spite of a reduction in the quantities of petroleum imports, register an advance of approximately 12 per cent over the totals of 1932, the year when these excise taxes went into effect, as shown in the exhibit previously mentioned.

"The admission to our markets of low-cost Venezuelan petroleum cannot help maintain our American standard of living.

"The extent to which the production of crude petroleum in Venezuela is dominated by foreign interests is shown in the accompanying Exhibit 2, which presents the percentages of the total production of Venezuelan petroleum by foreign companies for 1935, 1936 and 1937. This table shows that subsidiaries of the Standard Oil Co. of New Jersey produce about 50 per cent of the total crude oil production in Venezuela and Gulf Oil Co. controls about 11 per cent. Practically all the remaining production is controlled by companies of the Royal Shell group. This supplements the information given in the brief filed with the committee which showed that 45 per cent of the total imports of crude petroleum from Venezuela was brought in by the Gulf Oil Corp. and about 20 per cent by the Standard Oil Co. of New Jersey."

NO "CEMENT HEADACHES"

over shutdowns *with* UNAFLO CEMENT on the job!

Unaflo back washed out with normal pressure after 2 hour shut down

In this particular well, a cement retainer was run to 4063′ on 2¼″ tubing, above the top perforations which had been previously cemented off.

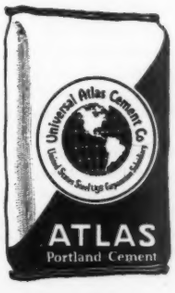
598 sacks of Unaflo cement were pumped into the tubing. Working pressure was only 1000 to 1500 lbs. At this point there was an unavoidable delay of 2 hr., 14 min. However in spite of this shut down, Unaflo was back washed out of the tubing with normal pressure.

Time of cementing operations:

Mix and pump 598 sacks Unaflo	1 hr. 23 min.
Make repairs	2 hr. 14 min.
Unscrew tubing from retainer	13 min.
Back wash tubing	32 min.
Total	4 hr. 22 min.

Have *you* tried Unaflo? If not, use it on your next job and see why operators everywhere are enthusiastic about this easy flowing cement with a retarded set that gives you *time* to get it down in the hole in the face of delays—then sets hard as a billiard ball to form a tight shut-off against water and gas. Universal Atlas Cement Co., United States Steel Corporation Subsidiary, Amicable Bldg., Waco, Texas; Kansas City; Tulsa; Oklahoma City.

A Cement for Every Oil Company use at Oil Well, Refinery, and Filling Station



Atlas portland cement for *surface* work and for cementing *surface* casing. Unaflo cement is recommended for *deep* well work.

Lumnite cement is used in Oil Refineries for making Refractory, Insulating and Heat-Resistant Concrete Linings in Still Furnace Walls, Bottoms, Roofs, Foundations, Ducts, Flues and Stack Linings; Tube Sheet Insulation.

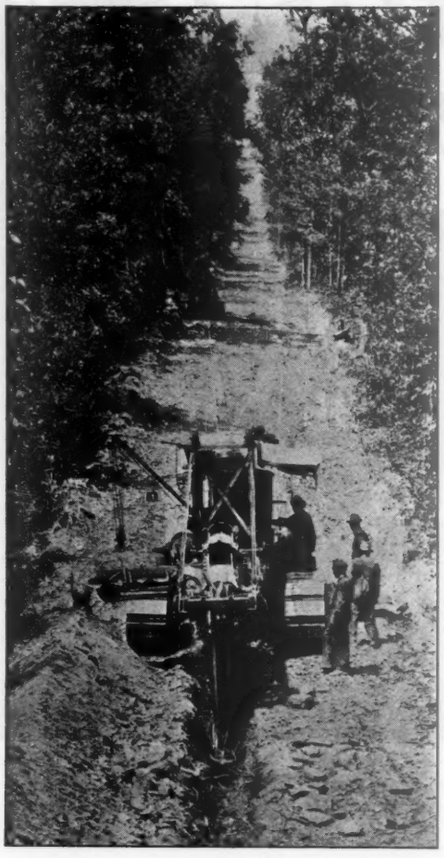
Lumnite cement makes Corrosion-Resistant Concrete and Mortar Lining in Distillation and Cracking Units; Re-Run Stills; Absorption Systems; Chemical Treating and Ethyl Plants.

Atlas White the cement that is pure *white* and non-staining. Exceeds specification requirements for portland cement strength. Ideal for ornamental work in connection with service station construction and repair.

U-19

Universal Atlas
CEMENTS

Pipe Line Activity



International Harvester Photo

Trencher on steep grade

Gas Line Replacement

WINDSOR, Ontario.—The Windsor Gas Co., local subsidiary of Union Gas Co. of Canada, Ltd., is replacing 3 miles of 10-inch transmission line on Highway 2-A, close to Windsor, while about some 7,000 feet of replacements are being made in other parts of the Windsor system.

Oil Pipe Line Project In Saskatchewan District

BISHOPRIC, Saskatchewan.—National Sodium Products, Ltd., headed by Allison Bishopric, and operating an extensive chemical plant here, is planning to lay 32 miles of 3-inch pipe line to convey Turner Valley crude from Moose Jaw, Saskatchewan. The Bishopric refinery has a capacity of 800 bbls. a day. Freight rates on crude from Calgary to Moose Jaw are 18½ cents a barrel, and from Moose Jaw to Bishopric an additional 9 cents. It is estimated crude could be conveyed by pipe line from Moose Jaw to Bishopric at 5 cents a barrel.

United to Lay 48-Mile Gas Line From Katy Field to Clinton

HOUSTON, Tex.—United Gas Pipe Line Co. is securing right of way for a 48-mile combination 10-, 12- and 16-inch gas line from the Katy gas field in Waller County, to the company's distributing plant, about 10 miles north of Clinton in Harris County. The line will tie in with the Fairbanks and Satsuma fields several miles northwest of Houston. Construction of the line will cost an estimated $800,000 and the company expects the line to be in operation within the next four months.

The Katy gas field is considered one of the largest gas reserves in the Gulf Coast territory and recent development in the Satsuma and Fairbanks fields have uncovered additional reserves.

Atlas Is Running Survey for Shreveport Discovery Outlet

SHREVEPORT, La.—Atlas Pipe Line Co. is running preliminary surveys for a proposed line which will connect R. E. Allison No. 1 Ellerbe, discovery well, on the outskirts of Shreveport. The survey was for the purpose of locating an old pipe line laid years ago and to determine its condition.

Twelfth Annual Field Conference Kansas Geological Society

The Kansas Geological Society with the cooperation of the Rocky Mountain Association of Petroleum Geologists has completed plans for its twelfth annual field conference to be held along the Front Range of the Rocky Mountains in Colorado, September 1 to 3, inclusive. The conference will convene at the Kit Carson Hotel, La Junta, Colo., Wednesday evening August 31, and will be devoted to a study of all the sedimentary rocks exposed along the Front Range from their contact with the pre-Cambrian granites to the Oligocene beds. Large unconformities, lateral gradation of beds, and wedging out of formations are some of the features of the conference.

Thursday, September 1, the conference will leave La Junta at 7 a.m. The morning trip will be devoted to observing the Cretaceous beds exposed on the Apishapa uplift. After leaving Walsenburg a number of dikes in the Pierre shale, and the Dakota sandstone overlapping pre-Cambrian will be seen. In the afternoon the type locality of the Harding sandstone (Simpson) and other Ordovician beds will be seen. Also excellent exposures of the Fountain sandstone, Morrison and Cretaceous beds will be observed at Canon City.

Friday, September 2, the conference will visit Williams Canyon where exposures of Manitou limestone and Sawatch sandstone will be seen. Buried pre-Cambrian highs beneath the Sawatch will be observed when passing through the Narrows. The party will visit the Glen Eyrie estate, type locality of the Glen Eyrie shales. During the afternoon the conference will continue northward along the Front Range viewing outcrops of the Fountain and Lyons sandstone. An oil seep in the Dakota sandstone will be one of the afternoon's features. A stop will be made at the Lyons Quarry, type locality of the Lyons sandstone.

Saturday, September 3, the conference will continue northwest from Fort Collins. The Bellevue dome will be seen. Thinning of the Lyons sandstone to the north can be observed. A stop at Oil Canyon will be made to study the thickening of the fossiliferous Ingleside formation of the Upper Pennsylvanian and to collect fossils. The conference will end at the Stanley Hotel, Estes Park.

Mexican Eagle Co. Seizes Shipment in Dutch Port

A dispatch from Amsterdam, Holland, says the Mexican Eagle Oil Co. was reported to have seized 1,000 tons of oil in two tank lighters at Dordrecht on contention it still owned the expropriated wells which produced the cargoes in Mexico. The seizure was reported to have had the permission of the port's court of justice. Mexican Eagle (Aguila) was one of the 18 British and American companies expropriated by the Mexican government.

Meanwhile, Bataafsche Petroleum Co., member of the Shell group, appealed from a court judgment which lifted an embargo placed previously on the Swedish tanker Lundgren carrying a shipment of Mexican oil. The embargo was granted June 18 and removed August 2.

Mississippi River Bed Lease Sale Fails

BATON ROUGE, La.—Louisiana offered lease of 2,000 acres of Mississippi River bed and got no bidders.

The site, located in Ascension Parish between Donaldsville and Darrow, is about 12 miles north of the oil producer brought in on the river batture by Continental Oil Co.

The federal Government required Continental to build a levee around the batture or false land formed at a bend in the river so the well would not constitute a menace to navigation or a hazard to the levee system.

Natural Gasoline

Compression Equipment Set At Portex Recycling Plant

SHREVEPORT, La.—Portex Oil Co.'s gas recycling plant in the Haslam area of Shelby County, Texas, was expected to be placed in operation in the near future following the setting of a 600-hp. compressor last week. The company is now installing separation and extraction units, storage tanks and other equipment. The plant will handle the output of three gas-distillate producers.

Permission Granted for Three Gas Recycling Projects

FORT WORTH, Tex.—Permission to process sweet gas for its gasoline content and use the residue gas for repressuring was granted F. C. Henderson and E. P. Henderson of the Henderson Co. by the railroad commission last Saturday. The project will be in Hutchinson County in the Texas Panhandle. Under the order the company will be permitted to produce 25 per cent of the open flow potential of its sweet gas wells. The gas produced in addition to that used for repressuring will be considered in allowables otherwise set for the field.

Two other special orders granted permission for the recycling of gas in two Nueces County fields. Camp Production Co. was authorized to construct an experimental plant in the Stratton field for extraction of gasoline from the gas and returning the residue to the same formation. Like permission was granted J. W. Glass for a plant in the Agua Dulce field. In each instance a flow of 25 per cent of the open flow potential was allowed, and any gas produced within the 25 per cent outlet not used for repressuring would be subject to proration.

Phillips to Construct Oil Substation in Harper Field

FORT WORTH, Tex.—Plans for the construction of an oil substation in the Harper field, West Texas, have been announced by Phillips Petroleum Co. Lean oil from its plant at Judkins will be pumped to the proposed substation, where it will absorb gasoline vapors from the gas. The rich oil will then be returned to the Judkins plant for stripping.

Natural Gas News

Lone Star Gas Corp. Files Amendment With S.E.C.

WASHINGTON.—Lone Star Gas Corp. has filed an amendment with S.E.C. which makes its entire new issue of $20,000,000 of 3½ per cent debentures, due 1958, convertible into common stock. Previously, the company was to make only $10,000,000 of the debentures convertible. The amendment registers 1,460,000 shares of common stock which are to be reserved for conversion. The debentures are convertible into common on the basis of $13 51-73 per share any time before August 1, 1945.

Concurrently with the issue of debentures, the company will borrow a total of $11,300,000 from banks as follows: $6,780,000 from Union Trust of Pittsburgh; $2,486,000, Chase National Bank; $1,356,000, Mellon National Bank of Pittsburgh, and $678,000 from Farmers Deposit National Bank of Pittsburgh. The new bank loan notes will be payable in installments aggregating $1,000,000 each six months from February 1, 1939, to August 1, 1942, inclusive, and $550,000 each six months thereafter to and including August 1, 1945. Annual interest rates on the notes will be 2⅞ per cent.

Underwriters for the debentures are: Mellon Securities Corp.; Smith, Barney & Co.; First Boston Corp.; Kidder, Peabody & Co.; Blyth & Co., Inc.; Bonbright & Co., Inc.; Brown Harriman & Co., Inc.; Halsey, Stuart & Co., Inc.; Glore, Forgan & Co.; Ladenburg, Thalmann & Co.; W. G. Langley & Co.; Lazard Freres & Co.; Shields & Co.; Dean, Witter & Co.; J. E. Baker & Co., and Kuhn, Loeb & Co.

Gas Agreement Approved By Hamilton Council

HAMILTON, Ontario.—The Hamilton city council has approved the agreement whereby United Gas & Fuel Co., subsidiary of Union Gas Co. of Canada, will take over the Dominion Natural Gas Co. system and operations in the Hamilton metropolitan area. A 90 cents per 1,000 maximum rate until 1946 is provided under the agreement, with a 75 cent maximum till 1941, together with the maintenance of natural gas service at least in the areas now supplied with that product.

Federal Power Commission Directs Company to Answer Complaint

WASHINGTON, D. C.—The Federal Power Commission has directed Hope Natural Gas Co. to file within 30 days an answer to the complaint of the city of Akron, Ohio, that the price charged by the Hope company to the East Ohio Gas Co., and alleged affiliate, for natural gas resold to Akron and other consumers is excessive, unjust, unreasonable, greatly in excess of the price charged to nonaffiliated companies and to certain industrial consumers in Ohio, and unduly discriminatory between customers and between classes.

This is the commission's second formal proceeding under the Natural Gas Act, both of which have involved Hope Natural Gas Co. and East Ohio Gas Co. In its first formal proceeding, the commission directed the Hope company to answer within 30 days a similar complaint filed by the city of Cleveland, Ohio, which is also served by the East Ohio company.

As in the case of the Cleveland petition, the city of Akron asks that the commission institute an investigation of the rate fixed in the intercorporate contract between Hope and East Ohio, commonly known as the river rate, and prays for a finding that said river rate is excessive, unreasonable, and unjustly discriminatory, and for the fixing of a just, fair, and reasonable rate.

Arkon's complaint and petition alleges, in part, that:

"The only company distributing natural gas in Akron is East Ohio Gas Co., a wholly owned subsidiary of Standard Oil Co. of New Jersey, which purchases approximately 70 per cent of the gas which it merchandises in Ohio from Hope Natural Gas Co., also a wholly owned subsidiary of Standard Oil Co. of New Jersey, said gas being produced in West Virginia and delivered to the East Ohio company at the Ohio River.

"The price charged by the Hope company to the East Ohio company for resale to consumers in Akron and elsewhere for all gas, including domestic, commercial and regular industrial gas, and except only certain gas sold for resale to large industrial consumers under special contract, is 38½ cents per thousand feet. Under the contract between the two companies, East Ohio pays to Hope annually a total of approximately $13,000,000."

On May 11, 1937, the city of Akron passed a rate ordinance, regulating and fixing the prices and terms upon which East Ohio shall furnish natural gas for and during the period from June 10, 1937, until July 10, 1941. East Ohio has appealed from the ordinance rates to the Public Utility Commission of Ohio, and has suspended the ordinance rates by filing a bond to refund to its customers in Arkon the excess collected in the interim over and above the ordinance rate or any other rate found to be fair by the Ohio commission.

United Carbon Co. Report For First Six Months

Report of United Carbon Co. and subsidiaries for six months ended June 30, 1938, shows net profit of $813,049 after federal income taxes, depreciation and depletion, but before surtax on undistributed profits, equal to $2.04 a share on 397,885 shares of common stock. This compares with $1,365,368 or $3.43 a share on common in first half of 1937.

For quarter ended June 30, 1938, indicated net profit (based on a comparison of company's report for first quarter of fiscal year and the six months' period) was $374,685 equal to 94 cents a share, comparing with $643,000 or $1.62 a share in June quarter of previous year and $438,364 or $1.10 a share in quarter ended March 31, 1938. Inventories were $1,081,518 against $748,777.

New York Gasoline Hearings Set for August 25-26

ALBANY, N. Y.—Consumers of gasoline in northern New York, as well as retail distributors of the product, are to have an opportunity to present their views as to what should be done to reduce the cost to the consumer. A two-day public hearing by the New York state joint legislative committee to investigate the petroleum industry will be held August 25 and 26 in the courthouse at Watertown, beginning at 10 a.m.

The committee, headed by Assemblyman Harold B. Ehrlich of Buffalo, has been functioning for three years and will conclude its work next winter.

Investigation, the committee says, has disclosed that some gasoline retailers have sold highly adulterated gasoline at standard prices. As a result of their discovery and other unsatisfactory conditions in the field the committee has recommended that the state establish minimum standards for the various grades of gasoline and that each pump must carry a marker showing the grade of gasoline, as well as the price.

Indiana Association Dates

The fall convention of the Indiana Petroleum Association will be held at the Hotel Severin, Indianapolis, October 12-13.

Refinery Projects

New Calgary Refinery

CALGARY, Alberta, Aug. 13.—Work on the new $1,350,000 refinery of British American Oil Co. in East Calgary will be started shortly after August 25, as soon as necessary formalities in connection with the site are completed. About 350 men from Calgary will be engaged in construction.

Airways, Ltd. (C)

Revamped 6,000-bbl. refinery of the British American Oil Co. located at Toronto, Ontario, Canada. The plant processes East Texas crude brought to Montreal by ocean-going vessels and then it is taken by lake steamers to Toronto. Storage facilities are available for crude at the refinery to permit operation through the winter and after the lakes are closed by ice

WHAT IS THE COST?

YOU SHOULD KNOW BEFORE YOU DRILL!

THERE is no other reason to prefer one method of drilling to another, except the reason of *overall economy.*

You may need cable tools. You may need a rotary outfit. Or a combination of both. Specific, competent analysis is necessary before you can make your decision.

Depth, character of foundations both for drilling and production possibilities, accurate appraisal and analysis of the time factor and its relation to cost —— these all vary in different cases. They all need to be considered for each case independently, if unnecessary waste is to be avoided.

Whatever drilling method you may use, reliable equipment and a capable crew are necessary. An analysis assuring these, with your own requirements definitely in view, will enable you to compare, decide, and then proceed, knowing that the method you adopt is the best for your particular job.

Cable-system drilling is economical only with good equipment, properly maintained, and good equipment includes good tools. *Spang Cable Tools* are the standard of comparison for good tools the world over.

Fig. 524 Fig. 511

SPANG CABLE TOOLS

The HIGHER STANDARD

SPANG AND COMPANY, BUTLER, PA.

EXHIBITING SPACE IN DEMAND FOR HOUSTON OIL SHOW

Corner of main exposition building at Houston, Tex., where Oil-World Exposition will be held April 24-29, 1939

Complete display and demonstration of equipment for every branch of the oil industry are already assured for the next Oil-World Exposition in Houston, Tex., April 24 to 29, 1939, according to Ed Lenzner, general manager. In addition to the extensive outdoor spaces reserved by manufacturers having heavy equipment for demonstration, over 400 spaces have been sold within the main building and the annex. A great number of the companies exhibiting in the 1937 show have increased their spaces considerably for the 1939 exposition.

Indoor exhibiting facilities have been increased by an annex which extends the main floor of the Coliseum to provide an additional 45,000 square feet. Additional inside space is also being made available on the ground floor of the main building which will give another increase of 45,000 square feet of exhibiting space.

The demand for outdoor space that can be utilized for demonstration work as well as for the display of derricks, rigs, and all types of heavy machinery has made necessary the provision of considerably more land than was used at the previous show. The additional territory required to meet this demand has been added to the exposition grounds and is immediately adjacent to the main building.

To Revive Pennsylvania Oil Investigation Commission

HARRISBURG, Pa.—A bill to revive the recently invalidated Pennsylvania oil industry investigation commission is now in the hands of Attorney General Guy K. Bard whose opinion on its constitutionality was asked by Governor Earle when it was presented to him for signature after passing both the house and senate. The investigation was held unconstitutional by the state supreme court early in June on the ground that it was created by a joint resolution, and, as such, was not a law.

The original bill appropriated $37,000 to complete the investigation begun by the invalidated commission. Considerable interest is being manifested by oil men regarding the makeup of the new commission since Judge Ralph Smith, chairman of the first group, opposed Earle in the recent primary election and therefore is not expected to be renamed chairman.

Humble Will Recycle Gas In the Pledger Field

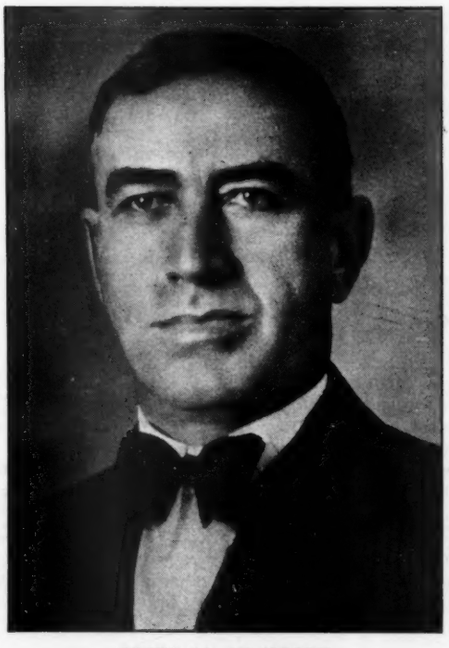
AUSTIN, Tex.—Humble Oil & Refining Co. has received permission from the Railroad Commission to experiment in recycling gas in the Pledger field of Chambers County. Engineers of the commission reported processing gas and returning it to the horizon from which it was produced would be in conformity with statutes and would not result in physical waste but would be in the interest of conservation.

Permission was granted for the company to produce not in excess of 25 per cent of the daily open-flow potential of gas wells in the field, to process it for its gasoline content and to return the residue to the horizon from which it was produced.

It was stipulated that gas proration schedules applicable to the field would consider only that volume not returned to the producing horizon which would be sold or utilized, according to the gas conservation act.

Obituaries

JOHN M. McNALLY, 59, division superintendent of Stanolind Pipe Line Co. with headquarters at Tulsa, died suddenly at his home in Tulsa, August 12. He was born at Sayer City, Pa., and grew to young manhood in the oil field country there. His first employment in the oil industry, at 21, was with the National Transit Pipe Line Co., as a field gauger. Later he served four years with the Buckeye Pipe Line Co. in Ohio. His next employment was with the Illinois Pipe Line Co. at Elwood, Ind., where he remained eight years. With the development of the fields in the Southwest, he moved to Oklahoma in 1914 and served as a gauger for Prairie Pipe Line Co. for about five years at Owasso and Nowata. In September, 1919, he joined the Sinclair Pipe Line organization and served as a gauger. In April, 1920, he was promoted to district foreman with headquarters at Hominy, Okla., and in September, 1922, he was made division superintendent, with headquarters at Okmulgee. He continued as division superintendent in the organization which became the Stanolind Pipe Line Co. in October, 1930. He was in direct charge of the company's operations in such "boom" oil fields as Cromwell, Seminole, Oklahoma City and Fitts, which made him well known among the oil men of Oklahoma. During the past three years, Mr. McNally's headquarters have been in the general office at Tulsa.



JOHN M. McNALLY

WILLIAM BLAKE SMITH, 56, whose dabbling in drilling was responsible primarily for the Mexia oil strike, died at Mexia, Tex., recently. In 1912 a farmer's water well brought a mixture of oil and gas before salt water became its principal product. Mr. Smith formed a company, which drilled 10 wells in the next eight years. The first nine holes were unsuccessful, but a strong flow of gas rewarded the tenth effort. In 1920 Mr. Smith and his shareholders contracted for drilling a deep test, but halfway down, their finances ran low. Col. A. E. Humphreys took over the drilling to bring in the first oil producer in the Mexia field.

C. P. HEENAN, of Heenan & Coe, Oklahoma City, was fatally injured when struck by a hit-and-run driver and dragged 50 feet, east of Mattoon, Ill. He was born at Le Mars, Iowa, November 29, 1902. For four years he was in the employ of the Skelly Oil Co.

CHARLES NEATH, 57, superintendent of Union Gas Co., in the Haldimand field, and for 28 years an employe of the company, died in a hospital at Hamilton, Ontario, recently, following head injuries sustained while inspecting field operations.

Oil Field Hospital Planned For Turner Valley District

CALGARY, Alberta.—Plans for a hospital for the Turner Valley oil field, formulated last year by the Oil and Gas Association of Alberta, will be carried out by the newly organized Alberta Petroleum Association, in which the older organization was recently merged.

THE MARKETS*

CRUDE OIL: *No changes in posted schedules. Reports indicate that in a few scattered areas crude oil is being sold at delivered prices which are below the full posted schedules plus normal transportation charges. Developments point to lower production allowables in several states during September.*

REFINERY: *Refinery gasoline quotations unchanged, but markets not considered strong in most areas. Improvement in Pennsylvania Grade lubricating oil prices has not spread to Mid-Continent. Inquiries and orders continue to point to good demand for furnace oils and other distillates. Fuel oils weak on West Coast.*

TANK-WAGON AND POSTED DEALER: *Scattered changes in gasoline and kerosene prices in most cases are reductions.*

FINANCIAL: *Oil stocks more active and advance from levels of previous week. Average of 30 representative stocks for week ending August 13: High, 31.64; low, 29.32; close, 29.58. Week ending August 6: High, 29.50; low, 28.76; close, 29.18.*

**Detailed information in market section.*

Service on New Fields

AVOCA FIELD, WEST CENTRAL TEXAS

Compiled by The Oil and Gas Journal

Approved name:

Avoca.

Geographic location:

The pool is in the extreme northeastern corner of Jones County, West Central Texas, and is centered in sections 190 and 196 of the B.B.B.&C. Railroad Survey.

Principal cities and towns near field:

Abilene, about 20 miles south of the field, is the largest city within working distance from the field. Anson, 7 miles southwest; Albany, 13 miles southeast.

Location of supply houses:

Oil field supply and equipment are obtainable from Anson which has four supply stores, two acidizing companies, two tank companies, and a modern machine shop. The supply centers of Albany and Abilene also serve the field.

Railroads serving the area:

The Missouri-Kansas-Texas is the main railroad serving the area with a line running out of Anson.

Trucking and hauling facilities:

Adequate trucking and hauling facilities are accessible in either Abilene, Anson or Albany. All of these towns have been oil supply centers since the early days of West Central Texas exploration.

Hotels and other accommodations:

Anson and Albany both have good hotel accommodations while Abilene, 13 miles south, has some 15 hotels.

Schools and churches:

Anson and Albany both have elementary and high schools while Abilene has several elementary and high schools and two nationally recognized colleges.

Electric power and gas companies:

Electricity necessary for the field is furnished by the West Texas Utilities Corp. of Abilene. The Lone Star Gas Co. has a transmission line near the field.

DEVELOPMENT

Early history:

The Avoca pool was discovered by Iron Mountain Oil Co. and Humble Oil & Refining Co. No. 1 Carl Olander, and was completed on July 4, 1937, following treatment of the pay zone between 3,238 feet and 3,250 feet with 3,000 gallons of acid, for an estimated 7,500 bbls. of oil per day with a gas volume of about 5,000,000 feet. The well was drilled on a 1,250-acre block acquired by the Iron Mountain company from the geological firm of Jones & Stasney of Albany, who participated in the early field mapping. After the well had topped its first major marker at a high structural position, Humble bought one-half interest in the well and block. Originally contracted to 2,200 feet, the well was drilled past this depth and at 3,238 feet the pay horizon was topped. Twelve feet of penetration were taken, the upper 2 feet showing gas and the remainder being oil saturated lime.

Completions to date:

As of July 15, there were a total of 33 producing wells completed in the field.

Present drilling operations:

Total operations	6
Rigs	4
Drilling wells	2

Present daily average production:

The 33 wells in the field produce an average of 43 bbls. per well per day. This makes a total daily production of 1,419 bbls.

Manner of allocation:

Wells are allocated on the basis of one-half acreage and one-half potential. However, since there are only three operators in the field and production is very well regulated, the acreage factor does not actually affect allowables. Wells in the field now have a top allowable of 50 bbls. per day.

Spacing pattern:

The railroad commission order for the field states that wells may be drilled on each 10 acres. However, similar to the manner of allocation, this is not deemed necessary at the present time and wells are now located on a 20-acre pattern.

Accumulated production:

Actual production of the pool, cumulative since Iron Mountain ran its first crude in August, 1937, was 107,856 bbls. from the field's discovery and through the month of April, 1938, a period of nine months. Production through the month of May amounted to 32,144 bbls. and as of June 1, 1938, the field has produced a total of approximately 140,000 bbls. of oil.

Present owners of producing leases and number of wells:

Company—	Number prod. wells
Iron Mountain Oil Co.	13
Humble Oil & Refining Co.	14
Sinclair Prairie and Fain-McGaha	6
Total	33

GEOLOGY OF FIELD

The pool lies on a structural feature with a pronounced steep east dip and a slow dip to the west and north. This feature merges in a southwesterly direction out of Shackelford and Throckmorton counties and extends some distance down into Jones County. There are approximately 100 feet of closure in the actual Avoca pool structure. Various theories are advanced as to the origin or cause of this structure. Some geologists believe it is a fold, others that it is due to a deep zone of faulting in either the Ordovician or

Service on New Fields

possibly the still deeper underlying granite. This later theory is substantiated by the fact that development in the field has shown some evidence of cross-faulting in the more recently deposited formations and that the deeper structural conditions are much more pronounced than those of the shallower beds.

FUTURE DEVELOPMENT OF THE FIELD

Proven area:

There are at present about 1,200 acres proven for production in the field. It is defined on the northeast, east, south and southwest sides, so future expansion will run in a northwesterly direction.

Undrilled locations in proven area:

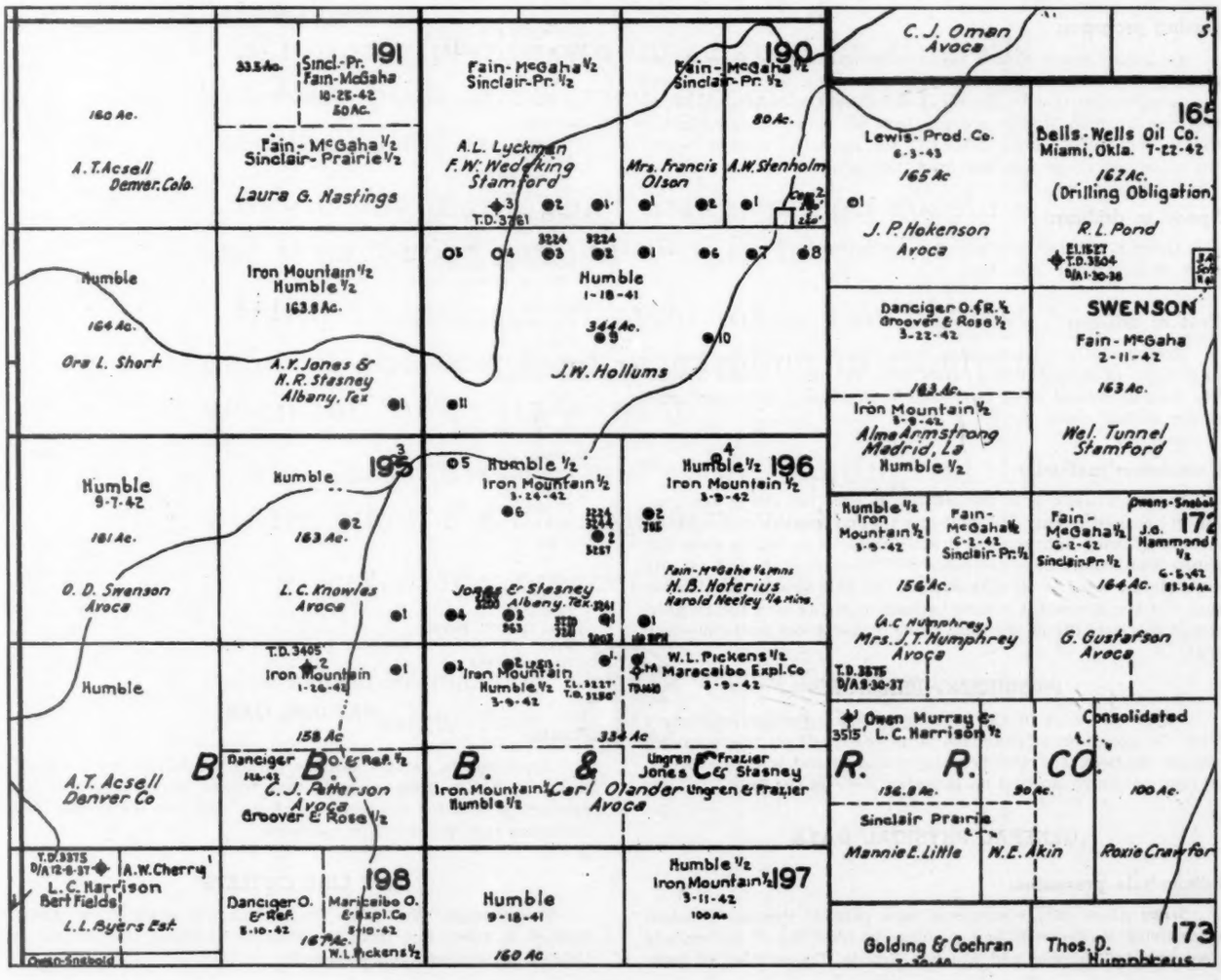
With an estimated 1,200 acres in the field, there would be room for 120 wells, providing they were drilled on a 1-to-10 acre pattern. Since drilling thus far has followed the 1-to-20 acre spacing, and will probably continue to do so, there would be 60 drilling locations. Thirty-three of these have been drilled, leaving 27 proven locations for the 1-to-20 pattern and 187 proven locations should the 1-to-10 pattern be adopted before the field is fully developed.

Estimated rate of drilling over the next 12 months:

Since the three major operators in the area practically control the rate of drilling, little extensive development can be forecast for the next year. Drilling will continue at a slow but steady pace for the practice of the operators at the present time is to stake only one location ahead. There will probably be only two or three completions made per month for some time.

Reserves:

Estimates of recovery from the Palo Pinto lime in the main part of the pool are widely varying and have been placed by some as high as 20,000 bbls. per acre. Deduction can be made, however, from certain facts regarding the porosity of the lime. A well in the center of the field cored 37 feet of pay section with only the top 5 feet recoverable. The last 2 feet of the 5-foot core, or only 3 feet into the pay section, showed a porosity of 26 per cent. The porous section is well saturated. Average pay section is about 15



Service on New Fields

feet, but no well has penetrated the base of saturation. No formation water is evident in any of the wells.

DRILLING

Types of drilling equipment used:

Early wells at Avoca were drilled with cable tools; later rotary rigs were used to the top of the lime and standardized for drilling in. During the last few months some wells have been drilled to bottom with rotary. The light-duty unitized rotary rigs, steam or diesel powered, are used. Some operators have adopted the policy of completing every other well with cable tools, so that more complete data on the pay horizon may be collected.

Drilling fluid:

Drilling conditions are not severe. No upper gas or caving formations present problems and thus drilling muds are designed primarily to give quick and efficient flushing action.

Type bits used:

In rotary work, rock bits are used to bottom, requiring from 8 to 9 for the complete well. Usually a 6⅝-inch drill hole is cut.

Casing program:

On rotary holes, 10-inch surface casing is set at about 60 feet and 5⅝-inch and 5 3/16-inch O.D. 14-pound casing set on top of the lime and cemented with 225 sacks. On cable tool holes 12-, 10-, 8-, 6⅝- and 5 3/16-inch strings are required, all being recoverable but the 10-inch and 5 7/16-inch. All wells are carefully mudded behind the oil string to protect shallower horizons.

Speed in drilling:

About 15 drilling days are required with rotary tools and from 50 to 60 days with cable tools.

Cost of drilling:

Rotary contract prices range from $3 to $3.50 per foot, making total costs of rotary drilled wells, into the tanks, about $18,000. The overall cost of cable tool wells runs about $2,000 more than rotary drilled wells.

Completion methods:

In rotary wells, it is the practice to core for top of the lime, set and cement casing, and drill into the pay section with rock bit on tubing, using light mud as drilling fluid. After taking sufficient penetration, connections are made and the well is washed in with oil. Only on two low structural wells has it been necessary to use acid, but the successful results indicate acidizing as a future practice in the later life of the field. None of the Avoca wells has been shot.

PRODUCING PRACTICES

All of the wells in the field are flowing through separators with the exception of one. This is an edge well on the northeast side of the field. The well is being reworked and is then expected to flow naturally, making no pumping wells in the field.

GENERAL PHYSICAL DATA

Bottom-hole pressures:

Maintenance of pressure has been possible through constant engineering surveillance and a quarterly checking of bottom-hole pressures by Humble and Sinclair Prairie. Cooperation of lease owners was possible through the fact that there are only three operators in the field. Subsurface pressures on May 25, on six Humble wells and nine Iron Mountain wells, corrected to the arithmetical average pressure 1,690 feet subsea, had decreased 22 pounds per square inch to 1,114 pounds per square inch since readings were taken on the same wells February 7, 1938. The original pressure is estimated to have been 1,470 pounds; however, as of July 15, the average pressure per square inch was about 1,460 pounds.

Gas-oil ratios:

The gas-oil ratio in the field averages about 260 to 1.

Formation characteristics:

The Palo Pinto lime underlies practically all of the West Central Texas counties and is usually productive where porosity is found. The Palo Pinto lime is of Canyon series of Pennsylvanian age and produces in several other surrounding counties including Brown, Coleman and Callahan. Average thickness of the pay section in producing wells is estimated at 15 feet. None of the producers is making bottom-hole water and estimates based on the depth at which the nearest dry holes struck water in the Palo Pinto lime indicate that the wells on top of the structure may be bottomed as much as 75 to 100 feet above the water.

CRUDE OIL ANALYSIS

Gravity, A.P.I.	41.5
B.S.&W.	None
Pour, °F.	Zero

Distillation

		Per cent
Gasoline		38.4
Gravity, A.P.I.	60.1	
I.B.P., °F.	98	
50 per cent	254	
90 per cent	351	
E.P.	402	
Recovery, per cent	98.0	
Color	30	
Sulfur, per cent	.018	
Octane number (L-3)	54.0	
Kerosene		14.4
Gravity, A.P.I.	40.1	
I.B.P., °F.	400	
50 per cent	448	
90 per cent	483	
E.P.	511	
Color	12	
Sulfur, per cent	.104	
Bottoms		46.2
Gravity, A.P.I.	26.5	
I.B.P., °F.	552	
70 per cent	726	
Per cent off:		
64, °F.	700	
77, °F.	750	
84, °F.	760	
Flash, °F.	320	
Fire, °F.	360	
Vis., 122° F., Furol	19	
Pour, °F.	15	
Loss, per cent	1.0	

NATURAL GAS

Plants:

There are no natural gasoline plants yet located in the field; however, it has been reported that within the next year a repressuring plant for the recycling of gas back into the porous lime formation will be placed in operation.

PIPE LINE OUTLETS

The Humble Pipe Line Co. carries the crude from Avoca through a 4-inch line from the field to its trunk line station at Hawley in southern Jones County.

Catch it both ways

The seasonal peak demands for gasoline and heating oils roughly complement one another * Heating oils now pay their own way but the bulk of refinery income is still from gasoline sales*** There is a definite optimum point beyond which decreased gasoline production means diminished profits—**
George Weber **in OIL & GAS JOURNAL, Aug. 4, 1938**

That hits the nail on the head and it's a nail in the coffin of skimming plant operation

Skimming plants can make good heating oils but "the bulk of refinery income is still from gasoline sales"

Skimming plants can't make enough gasoline and it isn't good enough

With Dubbscracking you make the highest yield of the best kind of gasoline in summer when the motorists want it

And less gasoline and more heating oil in winter when the householders want it

You catch the market both ways—always

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

INTERNATIONAL NEWS

First Cargo of Albania Crude Sent to Italian Refinery

Installation of an electrically powered, central pumping station in the Albanian oil district is another step taken by the Italian interests in bringing reserves of that country into commercial service. The first cargo of Albanian crude, a shipment of 2,700 tons, was recently lifted from Albanian waters en route to the recently completed hydrogenation plant and refinery at Bari, Italy.

With the Italian refining facilities at Bari and Leghorn designed for the special purpose of converting low gravity Albanian petroleum to motor fuel and other products, crude output from the latter country is expected to set a new record for 1938. Albanian production probably will approach the 1,000,000-bbl. figure this year compared to about 448,000 bbls. in 1937 which in itself was a new record. Most of the development work currently under way in Albania is concentrated in the Devoli district where operations are being electrified as far as possible.

Anglo-Egyptian Completes Its Second Well at Ras Gharib

The second producing well on the new Ras Gharib structure in Egypt has been completed by Anglo-Egyptian Oilfields, Ltd., flowing at the rate of 1,350 bbls. per day from total depth of 2,490 feet. The first and discovery producer on the Ras Gharib structure was completed in April at 2,560 feet for initial of 1,100 bbls. per day.

Anglo-Egyptian is now engaged in laying a submarine loading line from the producing field to a point off the coast where tankers can be loaded for shipment to the refinery at Suez. Oil shipments are scheduled to start within the next few weeks. Anglo-Egyptian is providing about 5,000 bbls. of field storage capacity to facilitate producing and shipping schedules.

The quest for exploratory concessions in Egypt continues unabated since Egyptian regulations governing the acquisition of permits were modernized last year. Due to individual companies being restricted in the total of permit land they may hold, new subsidiaries are being formed as the need arises.

Standard Oil Co. of California, which already is represented in the Egyptian search by the Soc. California Egyptienne des Petroles, has now registered as subsidiaries California Mediterranean Petroleum and Egyptian Desert Petroleum as private companies with nominal capitals of 5,000 pounds. Their capital is held by California Standard Exploration Co. Texas Corp., already represented by Soc. Texas Egyptienne des Petroles, has now formed Texas Mediterranean Petroleum and Levant Petroleum with capitals of 5,000 pounds held by Texas Exploration Co.

Under Egyptian regulations no company shall hold more than 40 permits each of 100 square kilometers.

The Ras Gharib producing structure is a direct result of the new Egyptian mining regulations which were modified sufficiently to justify companies in greater expenditures for geological work and actual drilling. Egypt has been surveyed most extensively and intensively by practically all companies interested in Near Eastern developments since the mining regulations were revised.

New Company Formed After Discovery in Kuwait

Discovery of prolific production from a limestone section at 3,685 feet in the Shiekdom of Kuwait Oil Co., jointly owned by Anglo-Iranian Oil Co. and Gulf Oil Corp. is the background of a new oil company formed to negotiate for concessions in southeastern Iraq. Negotiations have been proceeding in Baghdad between the Iraq government and J. Skliros for oil prospecting rights over a large area of southeastern Iraq, reported to comprise the Basrah Vilayet. Mr. Skliros, managing director of both Iraq Petroleum Co. and of Petroleum Concessions, Ltd., is understood to be acting in behalf of a new concern, Basrah Petroleum Co., Ltd., registered as a private British company with a nominal capital of $5,000,000. Interests in the Basrah Petroleum Co. are reported identical with those and in the same proportion as prevailing in Iraq Petroleum Co. and Petroleum Concessions.

After completing the discovery producer in Kuwait for more than 4,000 bbls. of 34 degrees A.P.I. gravity oil per day from total depth of 3,682 feet, Kuwait Oil Co. is now drilling below 1,650 feet on No. 2 Burghan. The second test on the property designated as Burghan is about 2¾ kilometers from the discovery producer. Kuwait Oil Co. drilled a failure, No. 1 Bahrah, about 50 miles north of No. 1 Burghan in the early part of 1937. The failure was drilled to about 7,950 feet. No action has been started by Kuwait Oil Co. to provide shipping facilities for the production from No. 1 Burghan. Operators will first determine if the producing structure covers sufficient area to justify expensive erection of pipe lines and shipping facilities before entering that phase of development. All indications are that another major oil discovery has been scored for the prolific Persian Gulf district in the Near East.

The company is using a gasoline powered combination rig in its operations. A shale mill is set up near the drilling rig, sea water is pumped from nearby Kuwait Bay and drilling mud compounded in steel tanks.

Oil Production in Venezuela Holding About the Same

Venezuelan crude oil production held at virtually a constant rate in July compared to June and to the same month a year ago. Estimated output for the past month totaled 16,051,695 bbls., a daily average of 517,796 bbls. In June this year, Venezuela crude production was estimated at 16,125,049 bbls., a daily average of 537,500 bbls. In July, 1937, Venezuela produced 16,092,922 bbls., a daily average of 519,127 bbls.

While production for the country remains virtually constant with the same period for the preceding year, there has been considerable internal change. The most outstanding change has been in Lagunillas where production last month totaled 6,092,687 bbls., compared to 8,869,992 bbls. for the same month in 1937. This decline of 2,777,305 bbls. has been offset by increases in La Rosa, Tia Juana, Quiriquire, Mene Grande, Tarra, Temblador (appearing among shipping fields for the first time this year), and Cumarebo.

The largest gain by any field over 1937 is recorded in behalf of the Tia Juana area which is shown to have produced 2,473,564 bbls. of crude oil last month compared to 937,000 bbls. in July, 1937. Furthermore, the yield of 2,473,564 bbls. does not include Lago Petroleum Corp. production in Tia Juana which is grouped with Lagunillas.

Gains by the other areas are less impressive, although La Rosa output of 2,736,739 bbls. last month is about 743,325 bbls. higher than for July, 1937.

There is growing evidence that Lagunillas production is definitely on the down grade and Venezuelan companies will be compelled to replace the future declines from new areas or deeper horizons with prospects decidedly better for the former of the two alternatives. Development in eastern Venezuela continues to hold the greatest prospects for discovery of new reserves in addition to those already proven.

The high spot of drilling activity in Venezuela last week was establishment of Standard Oil Co. of Venezuela No. 1 El Roble (Pantepec) as the second deepest test drilled in Venezuela. The test was last reported proceeding below 8,850 feet. Colon Development Co. No. C.R. 2, southwest of Lake Maracaibo in the Tarra district, was drilled to 9,031 feet before orders were issued to plug back for testing in shallower horizons.

Estimated production figures by companies and fields in Venezuela appear in the following table:

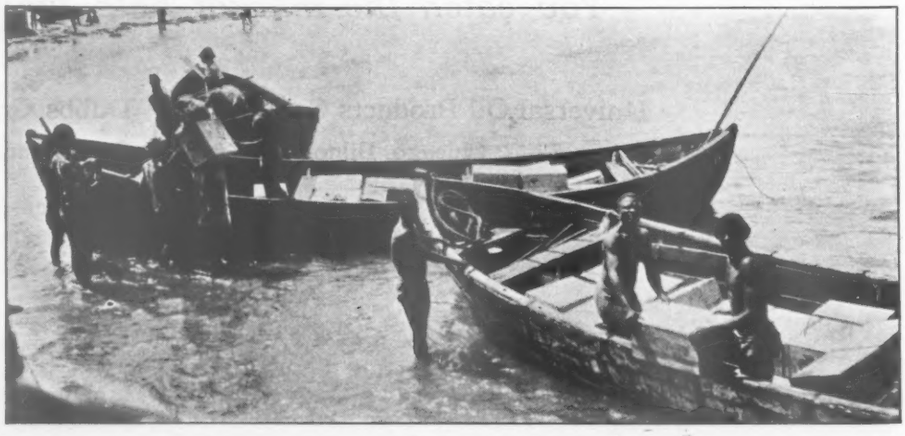
VENEZUELA CRUDE PRODUCTION

(By Fields)

	July, 1938	July, 1937	Daily avg. July, 1938
Lagunillas	6,092,687	8,869,992	196,538
La Rosa	2,736,739	1,993,414	88,283
Tia Juana	2,473,564	937,000	79,792
Quiriquire	2,241,546	2,160,936	72,308
Mene Grande	1,305,232	1,251,289	42,103
Tarra	441,542	378,035	14,243
Temblador	179,481	.....	5,790
Cumarebo	218,092	210,072	7,035
Pedernales	157,855	138,793	5,092
Lapaz	69,587	68,066	2,245
Concepcion	77,493	86,885	2,500
El Mene	57,877	59,700	1,867
Daily average July, 1937			519,127
Total June, 1938			16,125,049
Daily average June, 1938			537,500

(By Companies)

Lago Pet. Corp.	4,529,807	5,146,191	146,123
Venezuela Oil Concessions	4,529,036	4,221,311	146,098
Standard of Venezuela	2,970,779	2,889,878	95,832
Mene Grande Oil Co.	2,162,900	2,094,000	69,771
Caribbean Pet. Co.	1,305,232	1,251,389	42,103
Colon Dev. Co.	441,542	378,035	14,243
British Controlled	57,876	59,700	1,867
No. Venez. Pet. Co.	54,523	52,518	1,759



How petroleum products are transported from freighters to the mainland via surf boats along the shores and river banks of Africa

ENGINEERING and OPERATING

In This Issue

CEMENTING OKLAHOMA TEST REQUIRES 2,500,000 POUNDS MATERIALS

By L. G. E. Bignell ..... *Page 46*

What is probably a record in oil well cementing was accomplished recently when more than 2,500,000 pounds of cement and admixtures were pumped into a deep test in the Cement field of Oklahoma. The procedure is described by the author.

DEVELOPMENT OF NEW PRODUCTS FROM PETROLEUM BY CHEMISTRY

By Dr. Gustav Egloff and Dr. C. D. Lowry, Jr. ..... *Page 49*

A gradual change has taken place in the refining and the development of new products from petroleum. Chemistry and chemical reactions are fast forging to the front as a means of widening the utility range of the ultimate products of crude oil. Further improvement in the products already produced and the use of petroleum as a source of a large number of synthetic compounds are shown.

SAFETY FEATURES ON DRILLING RIGS ..... *Page 57*

Falling objects cause a large number of injuries and are responsible for a large percentage of accidental deaths. In their efforts to protect themselves, drillers have originated many inexpensive but effective safety devices. The article suggests the use of a wire line hobble.

EFFECT OF REFLUX IN THE FRACTIONATION OF COMPLEX MIXTURES

By W. L. Nelson ..... *Page 58*

In the third of a series of articles the author discusses the simplification and selection of the equations developed in preceding papers. He applies them to the fractionation of a paraffin base crude processed in a tower having four theoretical plates. Several examples using different amounts of reflux are shown and results indicated.

PROPER STORAGE OF MOTOR FUEL RETAINS VOLATILE HYDROCARBONS

By H. Stanley Norman ..... *Page 60*

The retention of the volatile hydrocarbons is of great importance to not only manufacturers but the users of motor fuel. This problem has attracted the attention of chemists and engineers and marketers. The author discusses pressure tankage used to reduce such losses.

USE OF ACID ETCHING IN TESTING THE STRENGHT OF WELDS

By Orville T. Barnett ..... *Page 62*

The testing of welds has become more complicated, in some cases requiring extensive apparatus. A simple and effective test has been developed which uses hot and cold acid etchants. The formulas for the etchants, their application and results are given by the author.

OPERATING IDEAS ..... *Page 53*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 66*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 68*

Oklahoma Well Takes A Two Million Pounds O

By L. G. E. BIGNELL

Over in Caddo County, Oklahoma, in the old Cement field several deep tests have been drilled. One of these wells bottomed in Pennsylvanian formations at 10,079 feet without finding oil. Another well drilled by the Ohio Oil Co. in Section 2-5n-9w found a brown sand at about 6,367 feet that made a well with an initial production of 1,077 bbls. of oil daily with about 71,000,000 feet of gas. These tests have inspired others to try for this deeper production and several wells have been drilled and have had trouble in passing through the Deese sand found at about 6,573 feet. The latest well of this type was drilled by Olson Oil Co. and resulted in a blowout and wild well that has taken a lot of material to bring under control.

Cement truck pumping mixture into wild well in Cement field, Caddo County, Oklahoma

About June 26 Olson Oil Co. No. 1 Rigney in NE NE NW of Section 12-5n-9w blew out while attempt was being made to recover some drill pipe stuck in a "dog leg" in the hole at about 3,200 feet. A "dog leg" is a sharp bend in a rotary hole through which it is difficult to pull the drill pipe. As a result, it is not unusual for the hole to wear into an elliptical shape and part of it be of smaller diameter than the drill collar and bit because it has been made by the drill pipe as it rubbed against the side of the crooked portion of the hole. This condition existed in the Olson well and when attempt was made to pull the string of drill pipe from a 6,532-foot depth to which the well had been drilled the pipe wedged in the offset hole at the dog leg at about 3,200 feet below the surface. As long as the mud was kept circulating and the pipe was rotated it did not stick, but it could not be pulled under such conditions, so it was necessary to shut down to make the attempt to recover the pipe. When circulation was cut off and the pipe no longer rotated it stuck and the trouble began.

The first step taken to recover the stuck pipe was to back off as much of it as possible above the dog-leg. The drill pipe was turned in such a manner as to unscrew the portion above the 3,200-foot level where it was held fast and in this manner it was possible to recover nearly 3,000 feet of pipe. Before the pipe had stuck fast about three 90-foot stands of drill pipe had been pulled so there was practically 3,000 feet of drill stem in the hole when the big fishing job began.

Short String of Surface Casing

This well was started with a 15½-inch hole and it was drilled to 400 feet and about 325 feet of 12½-inch casing was set for the surface string. Out of the bottom of this 15½-inch hole the diameter of the hole was reduced and an 8¾-inch bit on a 4½-inch drill stem was used. The hole was not cased below the surface string.

After a portion of the drill pipe had been recovered by backing off the upper part and pulling it, a "wash-over" string was made up. This kind of a string of pipe consists of drill pipe with several joints of casing on the bottom. The casing is of large enough diameter to permit it to slip over the top of the drill pipe in the hole. After the circulation of drilling mud had ceased when the pipe became stuck the material in the hole settled around the drill pipe and it was necessary to wash this mud away before any of the pipe could be pulled. This wash-over string was prepared and run over three joints of the drill pipe in the hole which had been left after the upper part had been recovered.

The next step was to add some casing to the end of the drill pipe to make a longer wash-over string and then run back into the hole. This string had eight joints of casing with a cutting tool on bottom and it was intended to cut off the drill pipe and pull as much of it as possible.

Regular mud from the pit was used in washing over the upper end of the drill pipe but in some way the well blew in out of control before this work could be finished. It appears the gas that had escaped from the sand had penetrated into the mud all the way up the hole and when the wash-over operation was under way it must have in some way lightened the fluid column enough to allow the gas to escape to the surface.

To add to the trouble the wash-over string stuck in the hole after the well blew out but it was finally released and part of it recovered by pumping in about 1,000 sacks of Baroid mud that weighed from 18 to 20 pounds per gallon. This mud was also used to try to kill the well and it accomplished this purpose at times and then the pressure would build up enough to cause the gas to again escape at the well head. The gas also escaped into the upper permeable sands and broke out in some old pumping oil wells and some water wells. This condition was noted soon after the well got out of control and it caused considerable trouble in the older part of the field.

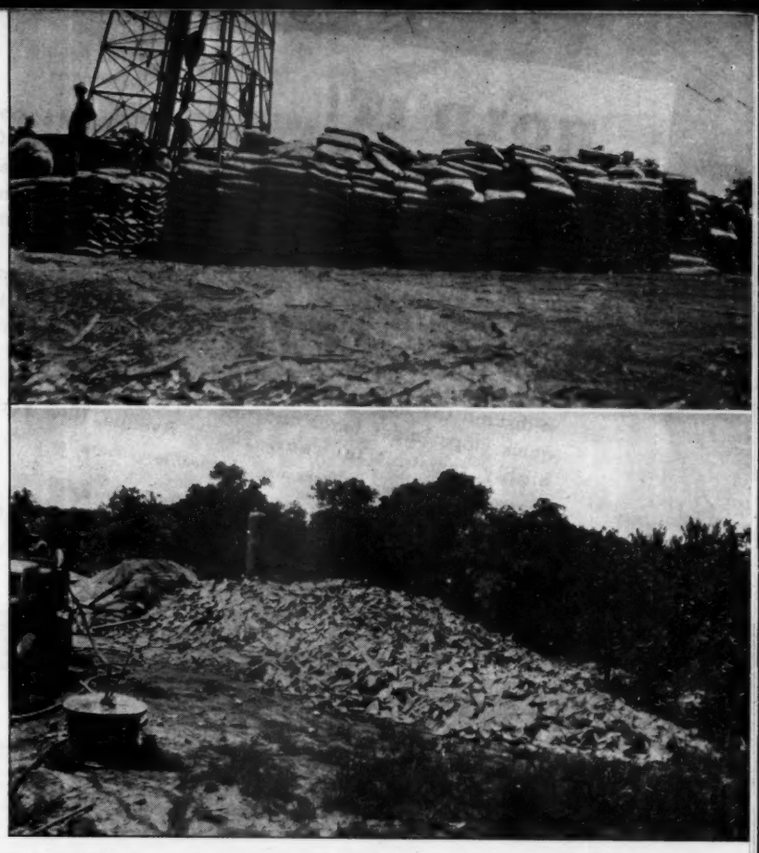
Old Wells Blow Out

The upper producing formation in the old Cement field is at about 2,800 feet, and as this gas worked across the field several old pumping wells began to flow and some water wells to spout and a rapid repressuring program was under way but not under control. The gas pressure was not very high but the volume of gas was great. The Deese sand has registered as high as 1,650 pounds per square inch pressure in one gas well completed in that formation, but at No. 1 Rigney the material used in killing the well was pumped into the hole with pressures of not more than 300 pounds most of the time. When the formation had been well filled with cement and mud the pumps registered about 3,000 pounds pressure during the last part of the operation. This did not indicate formation pressure but rather the pressure needed to force the last of the cement into the hole and complete the plugging job.

After part of the wash-over string of pipe was removed from the well it was decided to try to plug the hole. The connections at the well head were changed and blow-out preventers installed. With about 1,100 feet of drill pipe in the hole the cement pumps were connected to the top of the string and Baroid mud and gel-cement were pumped into the hole and finally a plug was formed at about 1,200 feet below the surface. With this plug in the hole it was found that most of the gas was escaping through the permeable sand at about 1,400 feet below the surface and blowing out in old wells in the field. This condition had existed before the plug was placed but it was more pronounced after the plugging operation so it was decided to drill out the upper plug and try to plug the well deeper.

After the plug was drilled an attempt was

s More Than s of Cement



Upper: One of several stacks of cement used at No. 1 Rigney well. Lower: Part of the 26,000 empty cement sacks after the well was brought under control

made to run in a string of drill pipe with several joints of casing and lower the casing over the upper end of the old string of drill pipe lost when the first trouble started. It was planned to set this wash-over string down tight enough over the end of the drill pipe to permit cement to be pumped to the bottom of the well. The wash-over string stuck in the hole at about 2,600 feet, or before it reached the top of the old string and this caused the operators to decide to try to force enough cement and admixtures into the well through it to plug the hole to bottom.

Two more cement trucks were ordered to the well and cement and other material pumped

Leif Olson, Oklahoma district manager for Olson Drilling Co.

in until the well was brought under control. The job was finally completed and it is reported that 26,000 sacks of cement along with about 9,000 sacks of Baroid and 1,000 sacks of Aquagel were used in killing this well. In addition to these materials about 40 tons of cotton seed hulls and some fiber cement were used to seal off these porous formations. Total weight of the material used in killing this well was over 2,500,000 pounds which is considered a record for quantity of material used in killing a well in the Mid-Continent area.

It has been estimated that a normal size 8¾-inch hole 6,532 feet deep would have a volume of about 2,578 cubic feet. If one sack of cement equals 1.1 cubic feet when placed, the 26,000 sacks used represents about 28,600 cubic feet. The Baroid and Aquagel used would fill about 40,800 cubic feet because those admixtures swell appreciably when mixed with water. It, therefore, is estimated that nearly 70,000 cubic feet of cement and admixtures went into this hole before the well was brought under control. In addition to this material there were coarse binders such as cotton seed hulls and manure, so it is probable more than 75,000 cubic feet of plugging material was used before the well was brought under control.

To account for this large amount of material in a hole which under normal conditions would have only about 2,600 cubic feet capacity, it is assumed that the cement and admixtures found escape into the very permeable gas sand at about 1,400 feet. It is also possible there was some cavy hole which had a much larger diameter than the 8¾-inch bit would drill. So it is possible to offer an explanation for the use of so much material in one well.

Immense Quantity of Cement Used

The 26,000 sacks of cement was shipped from Ada, Okla., plant of the Oklahoma Portland Cement Co. by a special 42-car train to Cement, Okla., to facilitate this work. The 9,000 sacks of Baroid and Aquagel were supplied by Baroid Sales Co., who kept a man on the job over a month. The cement and admixtures were pumped into the well with Halliburton Oil Well Cementing Co. trucks, one of which was at the well continuously for 38 days, and two others did special duty for about 10 days.

Trouble has been experienced in drilling into this Deese sand in other wells in the vicinity of Olson Oil Co. No. 1 Rigney. The Magnolia Petroleum Co. had a well go wild, and it is reported it made about 16,000,000 feet of gas during the period it was out of control. It was eventually plugged and killed.

The old Cement field in Caddo County, Oklahoma, was discovered through the drilling of a structure mapped by D. W. Ohern and Frank Buttram in 1916. Walter Jones and others drilled the first well known as No. 1 Funk in SW SW SW Section 6-5n-8w in Grady County about 3 miles west of the town of Cement and discovered gas at about 1,415 feet. Active drilling on the Caddo County side of the field where the Cement field was later developed started in 1917 with the completion of Oklahoma Star Oil Co. No. 1 Kunsemuller at a total depth of 1,700 feet and it encountered sufficient gas and oil to encourage additional drilling.

Frank Buttram and associates organized the Fortuna Oil Co. and pioneered in the field after the completion of Kunsemuller well. They sold their interests to the Magnolia Petroleum Co. in 1919.

In killing No. 1 Rigney it is reported that the largest volume of cement and admixtures was used that has ever gone into any well in the Mid-Continent region. The work was supervised by Joe Heinelman, superintendent for Olson Oil Co., with Grover Kilgore in charge of the Halliburton trucks, with Joe Offut, representative of the Oklahoma Portland Cement Co. on the job along with R. C. Marr, engineer for the Baroid Sales Co.

The work of bringing this well under control was under the general supervision of Leif Olson, district manager for Oklahoma for the Olson Drilling Co., with his brother Ralph Olson, toolpusher, assisting. Other members of the Olson Drilling Co. crew were "Fat" and "Curley" Acuff and Jake and Ed Euker. These men were ordered to the well from Fittstown, Okla., and Childress, Tex. Several other men belonging to the Olson organization were at the well at times and assisted.

New Well Proposed

The well was finally brought under control on August 6, but gas still escapes in small volumes into old wells and up around the casing at the well head but it is not serious enough to make trouble now but the well is being watched so that necessary steps can be taken if it shows signs of going wild again. It is reported the Olson Oil Co. is making ready to start drilling by for new hole.

Special train of cement shipped from Ada, Okla., to field for use in controlling No. 1 Rigney well

HOLD IT!
Stopping heavy loads at high speed, holding the line, or feeding it off—one way or another, draw works brakes play a vital part in drilling a well. They must be dependable for safety, and lasting for economy.
Cast Nickel-Moly steel brake rims meet both requirements. They withstand the heat generated by quick stops under load, and are highly resistant to wear. The driller can count on positive action when he needs it. Owners get longer service for their money.
Other Molybdenum steels, both cast and wrought, are giving outstanding service in the oil fields. For practical information about these steels and their applications, send for our free book, "Molybdenum in Steel." Climax Molybdenum Company, 500 Fifth Avenue, New York City.
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NEW PRODUCTS FROM PETROLEUM

By Gustav Egloff and C. D. Lowry, Jr.
Universal Oil Products Co.

IN RECENT years petroleum refining has become essentially chemical in its nature. It is based largely on chemical synthesis. During millions of years, nature produced hydrocarbons in great variety in the earth's crust, and our friends in the production end have made them available to us. But we are no longer satisfied with these hydrocarbons as prepared by nature. Straightrun gasoline is not suitable for modern motors and must be modified or replaced by that made by other means. Polymer products —really something new, made by synthetic reactions—are pushing into the fuel picture. Lubricants merely separated from petroleum are not satisfactory in our present-day engines, and they must be synthetically made or replaced by new oils, treated with the help of chemistry before they are suited to our uses.

Many of the newer products I shall mention are made by other industries from petroleum hydrocarbons. Many industries now look to us for their raw materials. Myriads of compounds, once laboratory curiosities, are made from hydrocarbons which our industry furnishes.

Up to the present, coal tar has been the great raw material for chemical synthesis. But do you realize that every one of the useful hydrocarbons from coal tar can be obtained from petroleum and in enormously greater amounts, and that petroleum offers a great reservoir of hydrocarbons of which coal tar contains no trace? It can furnish hydrocarbons of every group, paraffins, naphthenes, olefins, aromatics, acetylenes and terpenes.

We are going to stretch our subject a little to make it cover in some degree not only newer products from petroleum, but newer products used by the petroleum industry. For we must acknowledge our debt for assistance received from many other chemical industries. The manufacturers of fine chemicals, alloys, ceramics, and other corrosion resisting materials, and of solvents, have all contributed to the success of the oil industry. Even here we must take our due credit, for in many cases it was the driving demands of the oil industry which spurred these other industries on to new developments.

Source of Raw Materials

Let me particularize on these newer products. Some are made by the petroleum industry, others using petroleum raw materials in their manufacture, and some of interest used by the industry.

We referred to modern gasolines and lubricants as synthetic products. In this connection, one thinks first, of course, of cracking.

The world's production of crude oil would have had to be doubled had it been necessary to produce all the gasoline our civilization requires by atmospheric distillation alone. When you hear the oil industry condemned as wasteful, bear in mind that far above the wastes charged against us towers the development of cracking as an accomplishment in conservation.

We wonder whether even those who are most familiar with the magnitude of cracking realize that in addition to 360,000,000 bbls. of high-octane motor fuel, it produces annually 450,000,000,000 cubic feet of gas and tremendous amounts of fuel oil and coke and represents an investment of over $600,000,000. It is also a source of raw material of no mean significance, as cracked gases furnish the olefin hydrocarbons until so recently usable only as fuel, from which polymer gasoline and iso-octane, lubricants, alcohols, glycols, ethers, ketones, acids, resins, and synthetic rubber are now made.

Quantity Available

Polymer gasoline and iso-octane are familiar terms to all of you, but are you aware to what size this industry may well develop? Were all of the gases from cracking stills, and from oil and gas wells which can be used for polymer manufacture so utilized, the volume produced would aggregate 360,000,000 bbls., as much as the total production of cracked motor fuel, and of this 42,000,000 bbls. could be converted into iso-octane motor fuel by hydrogenation.

There are two methods of effecting polymerization—one using high temperature and pressure and the other catalysts. The thermal process operates upon both paraffinic and olefinic gases at temperatures ranging from 500° to 700° C., and pressures from atmospheric to over 3,000 pounds per square inch; the catalytic polymerization process treats olefinic gases at about 200° C. and 200 pounds or more pressure.

The source of the gases utilized, which contain 15 to 50 per cent propene and butenes, may be the cracking process or catalytic dehydrogenation of propane and butanes. The latter process can be carried out to produce almost theoretical yields of olefins from ethane, propane and butanes. The liquid product from catalytic polymerization boils within the gasoline range, and, as produced, has an octane rating of about 81 or, on a blending basis, up to 135, depending upon the percentage used and the octane rating of the gasoline to which it is added.

Polymerization Moves Fast

Polymerization has made rapid strides, and when all the units under construction are producing gasoline, the yearly volume will be nearly 23,000,000 bbls., requiring an investment of $45,000,000. In addition to the value of the polymer as blending material of exceptionally high octane rating, polymerization is also to be thought of as a means of conserving at least 100,000,000 bbls. per year of crude oil.

A spectacular phase of polymerization is the production of 100-octane aviation gasoline. The butenes and iso-butenes in a selected fraction from cracking still gases may be catalytically polymerized to iso-octenes of approximately 84 octane number and blending value up to 135 octane. The iso-octenes may be readily hydrogenated to a mixture of iso-octanes of octane rating from 95 to 98. When 100 octane rating polymer is desired, the catalytic reaction is carried out more selectively so that only the iso-butene is polymerized into 2, 2-4-trimethylpentene and this on mild hydrogenation is converted into the 100 octane reference hydrocarbon 2, 2, 4-trimethylpentane.

Iso-octane, only recently an almost unknown substance, then produced at what was thought an amazingly low price of $20 per gallon, has now become a commercial commodity at 20 cents a gallon.

For aviation use these high-octane products are usually blended with about 60 per cent of 74-octane gasoline to give the necessary volatility and 3 cc. of tetraethyl lead added to bring the octane rating to 100. Plants now in operation or being constructed will produce 100-octane gasoline at the rate of over 9,000,000 bbls. per year.

Iso-octane gasoline is of tremendous importance to air transport. It bids fair to revolutionize the design and operation of motors. Increased speed is not its only advantage. Experimental flights have shown that when used in engines designed to take advantage of the better fuel, there is a gain in power output of 20 to 30 per cent with 100-octane fuel as compared to 87-octane gasoline, so that the fuel load can give way to pay load.

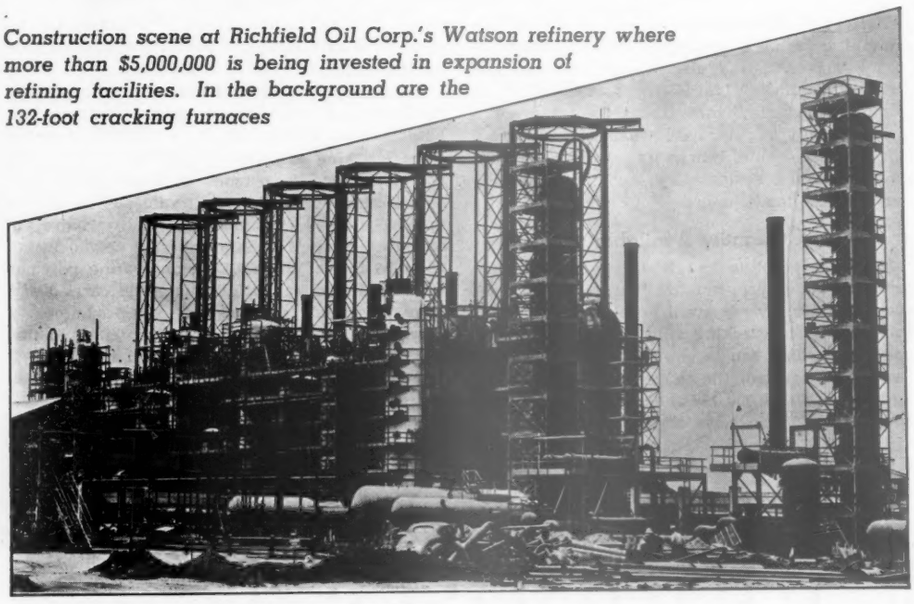
Doctor Barnard, of the Standard Oil Co. of Indiana, has stated that depending upon design and operating conditions, the revenue earning power of 1 gallon of gasoline may be increased from 2 to 5 cents per octane number improvement. The value of octane number improvement increases both with load carrying ability of the ship and cruising range.

The earning power of octane number improvement is so great, he has declared, that within practical limits the cost of gasoline cannot influence the trend toward higher octane fuels to any appreciable extent.

Lubricating Oils

We have already noted that lubricating oils as produced by nature are not suitable for many modern motors. With compression pressure being increased in order to improve engine efficiency, the demands upon lubricants have become more severe and a whole host of improvements, mostly through chemistry, have come into lubricant production. These include revolutionary changes in refining, preparation of addition compounds and synthesis of new lubricants from olefins.

The older method of refining with sulfuric acid was a wasteful process. It involved heavy



Construction scene at Richfield Oil Corp.'s Watson refinery where more than $5,000,000 is being invested in expansion of refining facilities. In the background are the 132-foot cracking furnaces

losses through polymerization, oxidation, and solubility of hydrocarbons in the acid. The use of solvents to separate hydrocarbons of high viscosity index from those of low quality has eliminated these disadvantages. Solvents now used are phenols with or without the simultaneous addition of propane, furfural, acetone, nitrobenzene, aniline, chloraniline, and benzol-sulfur dioxide mixtures. One widely used solvent, dichlorodiethylether or chlorox, is of particular interest as it is itself a chemical derivative of petroleum.

Additional compounds are put into lubricating oils to improve a variety of properties including oiliness, viscosity index, pourpoint, and oxidation resistance. Time will not permit more than mention of the claims made for them.

Antioxidants are of value in lubricating oils to retard sludging, organic phosphorous compounds having had some success. White oils and turbine oils have also been successfully protected against deterioration by inhibitors, while their use is being studied for cracked burner and diesel oils.

Some of the substances added to improve one or more of the properties mentioned, taken at random, are methyldichlorstearate, tricresylphosphate, oxidized petroleum oils and waxes, fatty acids, and their salts, halogenated hydrocarbons, long chain alkylated aromatics, hydrocarbons, beta-naphthol, and aluminum naphthenate. There are even some perfumes used in petroleum oils, not in lubricants, but in oils for domestic burners.

Lubricants manufactured by polymerizing ethylene, propene, butanes, pentenes, or light fractions of gasoline from the cracking of paraffin wax or waxy oils by the action of aluminum chloride are truly new products. Preparation of lubricating oils from ethylene, in a single step, was found to give an oil with a poor viscosity-temperature coefficient, but by thermal polymerization followed by aluminum chloride treatment an improved lubricant resulted. Since the viscosity of the lubricant is a function of the length of the straight chain in the molecule, the best polymerization treatment in lubricating oil production was found to be one which increased the length rather than the branching of the chain.

Polymerized oils are not only used by themselves but are said to give highly increased wearing qualities when added in small percentages to lubricating oils. For example, the increase in mileage of a lube oil of 100 viscosity index from Pennsylvania crude to which a high polymerized oil had been added had been reported as over 40 per cent.

Alcohols, Glycols, Ethers, and Ketones

The search for high antiknock motor fuels has led to the study of compounds other than hydrocarbons, among them, alcohols, ethers and ketones. The synthesis of compounds of this group from the olefins produced from the cracking process has added greatly to our potential motor fuel supply and also produced excellent solvents. Many of the compounds now produced existed a few years ago only in the musty pages of the chemical literature.

Ethyl alcohol, produced heretofore almost exclusively by fermentation is meeting sharp competition from that produced from ethylene in cracked gases. About 10,000,000 gallons of ethyl alcohol are thus produced yearly in the United States. All of the 110,000,000 gallons of alcohol required annually in the United States for industrial purposes could be produced from cracking still gases and probably at a cost lower than by fermentation.

Besides ethyl alcohol, propyl, butyl, pentyl, hexyl and others up to cetyl are now commercially derived from cracked gases or gasoline by treatment with sulfuric acid or from paraffins by hydrolysis of chloro derivatives. Methanol is being produced commercially by the controlled oxidation of natural gas, and is highly competitive with methanol from wood distillation or from carbon monoxide and hydrogen.

Methyl and ethyl alcohol are used as motor fuel in countries which have little or no hydrocarbon resources and are only warranted in such countries. The octane ratings of the alcohols are high; methyl alcohol has an octane rating of 98, ethyl 99, normal butyl 88, tertiary butyl over 100, normal amyl alcohol gives 78, tertiary amyl over 100.

Available Alcohols

The gallonage of alcohols potentially available from the olefins present in the gases produced throughout the world by the cracking process, assuming ethylene 6 per cent, propene 13.3 per cent, and butene 6 per cent, reaches enormous figures, as shown in the table below:

	Gallons
Ethyl alcohol	468,558,000
Propyl alcohol	1,358,189,000
Butyl alcohol	902,775,000
Total	2,729,522,000

Related compounds, ethylene, propene, diethylene, and triethylene glycols are being produced synthetically from the corresponding olefins. Ethylene glycol is used in greatest quantities, its primary use being as radiator antifreeze or cooling fluids for motors. It also finds use as solvent for dyes in the textile industry. The nitrate of diethylene glycol is an important explosive due to its low freezing point and compatibility with nitrocellulose explosives.

Many ethers and alcohol ethers are now synthesized on a large scale from gaseous products of the cracking process. They are versatile compounds, serving such widely different uses as anesthetics, solvents for gun cotton and high antiknock motor fuels. It is a fact which surprised most petroleum technologists, we believe, that all the ethers tested, except ethyl ether, have high antiknock values. We had tacitly assumed that ethyl ether, a terrific knocker, the first and best known member of the series, was typical of it. But isopropyl ether, by contrast, has an octane rating of 101. It is potentially available in the refineries of the world at the rate of over 420,000,000 gallons a year. This isopropyl ether blended with 40 per cent of 75-octane gasoline and 3 cc. of tetraethyl lead, would make over 1,000,000,000 gallons of 100-octane motor fuel available for airplane use.

There are a number of mixed ethers such as methyl or ethyl tert-butyl, methyl or ethyl tert-amyl, normal or iso-propyl tert-butyl ethers which also have octane ratings of over 100. An equally large amount of those is potentially available and they might be used as blending agents in motor fuel in order to increase their nondetonating properties.

Ketones produced from cracked gases are widely used as solvents, in the manufacture of rayon, smokeless powder, lacquers, bituminous paints, and in the dewaxing of lubricating oils. They also are of high antiknock value and may be utilized as motor fuel. Acetone has an octane rating of 100, and may be blended with 50 per cent of 70-octane motor fuel and 3 cc. of tetraethyl lead to produce 100-octane fuel. Methylethyl ketone has an octane rating of 98 and can also be used as a blending material to raise octane rating.

It should be borne in mind in considering these fuels, however, that petroleum hydrocarbons provide the highest energy content on either a volume or a weight basis of any liquid fuel. The use of nonhydrocarbon fuels, particularly those containing oxygen, whether alcohols, ethers, or ketones, introduces quite important reductions in heat or energy content. In relation to aviation use, Barnard has stated that, "If the octane number improvement involves a decrease in energy content, the *apparent improvement* must be discounted by two octane numbers for each per cent reduction in heat content below that of gasoline.

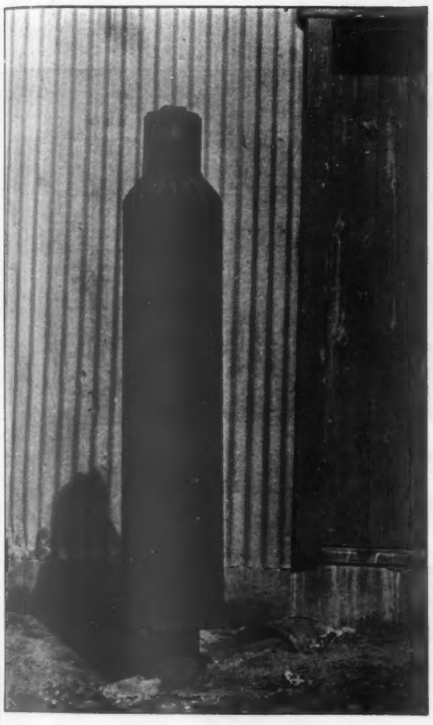
Inhibitors and Dyes

The investigation of antioxidants for commercial use has narrowed down to a relatively small number of compounds, as successful inhibitors must not only be potent, but also low in price, free of objectionable color and odor, soluble in gasoline and relatively insoluble in water. Certain phenols, amino-phenols, naphthols, and wood tar distillates are among the materials most commercially used.

From the first there has been something of an air of mystery about oxidation inhibitors. Perhaps this was because they are effective in such unbelievably low concentrations, a few thousandths of 1 per cent, perhaps one molecule to 40,000 of gasoline, serving to make stable in storage, gasoline which uninhibited would be unfit

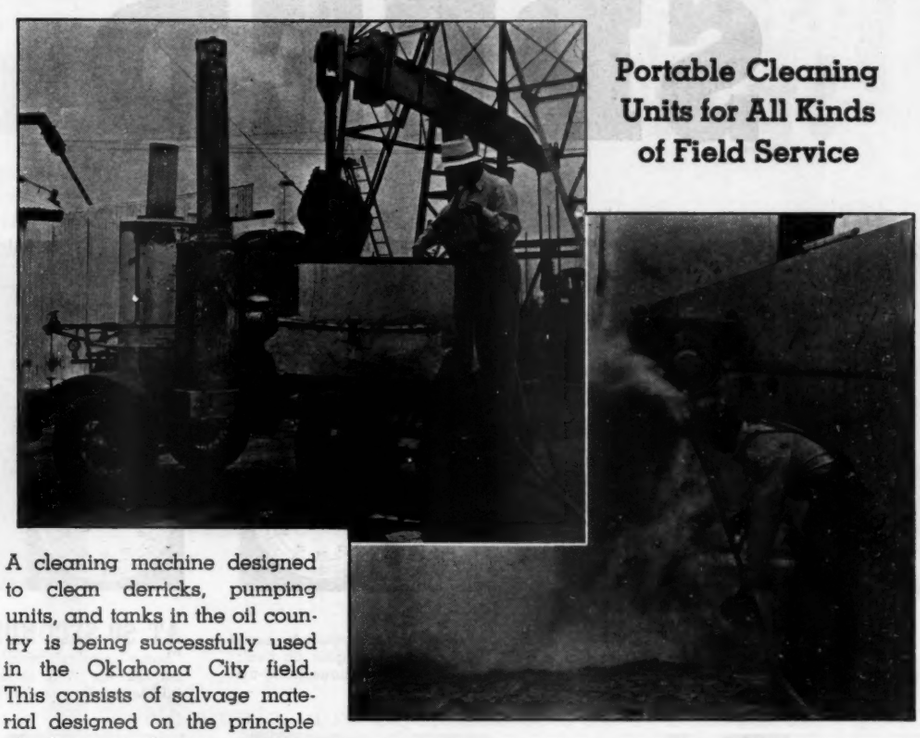
(Continued on Page 56)

OPERATING IDEAS



Muffler on Pumping Engine

It is essential to muffle the exhaust of engines when they are located near a company camp. In the St. Louis field of Oklahoma, an oil company has designed a very simple but effective muffler. The exhaust consists of a slotted 4-inch pipe inside an 8-inch slotted pipe as a sleeve. Slots in the two are staggered so that they do not match.

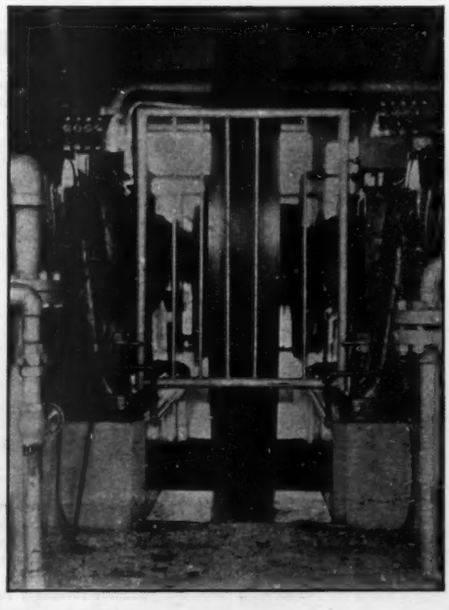


Portable Cleaning Units for All Kinds of Field Service

A cleaning machine designed to clean derricks, pumping units, and tanks in the oil country is being successfully used in the Oklahoma City field. This consists of salvage material designed on the principle of a hot water heater operating at a 40-pound pressure of steam using a 100-gallon boiler, holding sufficient water to operate four hours. Chemicals are added to the solution sufficiently strong to cut whatever substance that must be cleaned. The average battery of tanks of four can be cleaned in eight hours with one man operating the machine. The old method of washing down by hand would take a crew of five men at least two days to accomplish this. The machine is in such demand that the builder has designed several for the oil companies operating in this field.

Guard for Belt

Made from old 2-inch pipe and worn-out sucker-rods, this belt guard was installed on a horizontal compressor. Welded brackets on the side of guard are fastened to the engine bed bolts by the jam nut. The guard can be easily removed when the compressor is idle and work on the machine is necessary. but it prevents an accidental or intentional entrance into the belt pit while the



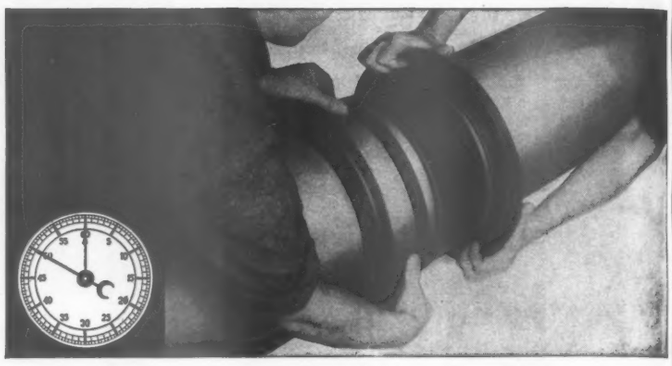
compressor is running. The picture was taken at a recompressor station in the South Burbank field in Osage County, Oklahoma.

Vent Pipe Line Tunnels

Both oil and gas lines must be vented at road crossings to eliminate the accumulation of any gas that might escape to cause an explosion. The ends of the tunnel may be welded to the pipe line to close the tunnel and thereby eliminate water.

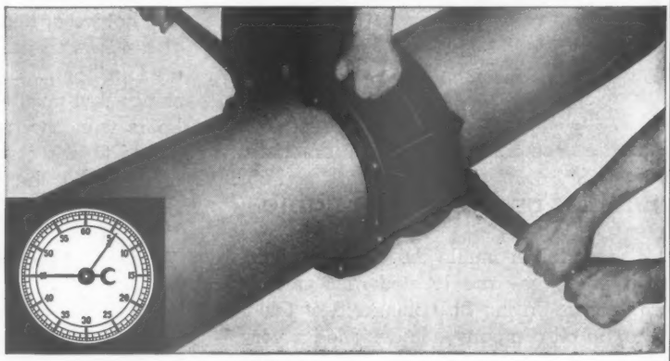
SPEED UP*

20 SECONDS—STEP 1! Dresser followers and gaskets have been placed over plain-end pipe (12" ID). Middle ring goes on next; note inside pipe-stop. With Dressers, no time is lost due to tedious lining-up of pipe-ends or other complicated "getting-ready" steps.



AT 50 SECONDS—STEP 2! Pipe-ends have been shoved "home" against middle-ring pipe-stop; gaskets and followers are then brought up. With Dressers, no one step holds up others. No workmen interfere with one another. Each has full-time job. No delays getting tests.

AT 2 MINUTES, 25 SECONDS—STEP 3! Bolts are inserted and nuts run up finger-tight. With Dressers, the small, well-bunched crew is always "up" with ditcher (reducing supervision problems). No "lag" between laying and jointing. No long trench length need be kept open.



AT 6 MINUTES, 45 SECONDS—FINAL STEP 4! Nuts are wrenched up tight. Jointing with Dressers is quickest part of job—can be done only in one way, i.e., permanently tight the first attempt every time! Flexibility gives top speed with straight pipe on many curves.

5.2 MILES IN 11 HOURS! That was the record set on this Dresser-coupled 5½" OD line in Texas. Assembly with Dressers is "straight-line"—economical from several points, *enabling additional labor to be added easily*. Wet ditches, rain, snow, muck, wind, swamps, even darkness, etc., cannot seriously retard progress.

LOCATION	SIZE OF LINE	RECORD	REMARKS
Southwest Texas	5½-in. OD	5.2 miles in 11 hrs.	Dawn-to-dusk. "Green" labor used.
Auburn, N.Y.	10-in. ID	4,640 ft. in one day	Going toughest in 13 states. Swamps, quicksand, and water.
Ontario, Canada	10-in. ID	52 miles in 50 days	Undulating terrain. Line completely buried without pressure test.
Cincinnati, Ohio	12-in. CIP	1,312 ft. in 9½ hrs.	Cast-iron pipe and couplings, requiring care in handling and lowering.
Buffalo, N.Y.	36-in. ID	680 ft. in 8 hrs.	First day's work by gang of "pick-up" relief labor, totally unfamiliar with pipe laying.
Ft. Wayne, Ind.	42-in. ID	400 ft. in 8 hrs.	Laying crew of only 10 men had to wait for trencher on almost every pipe length.
Birmingham, Ala.	60-in. ID	3,040 ft. in 8 hrs.	WPA labor; includes all work except small part of backfilling, and testing.

TYPICAL SPEED RECORDS. See Table above. Assembly time per Dresser joint may be safely estimated as follows: 4": 3 min; 6" & 8": 5 min; 10" & 12": 7 min; 14": 8 min; 18": 10 min; 20": 12 min; 24": 14 min. (Two boltmen—all jointing operations after stringing. Based on time studies. For other sizes, figure 2 man-minutes per bolt).

Your Pipe-jointing!

(Cutaway view of Dresser Coupling, Style 38)
* SPEED . . . .
...YES! ALSO:
1 PERMANENT TIGHTNESS—proved for 50 years, on 150,000 miles of pipe.
2 FLEXIBILITY—expansion, ground movements, vibration, lowering stresses, etc., are absorbed. Many curves, grades, etc., made with straight pipe.
3 SIMPLICITY—standard parts are assembled on plain-end pipe by unskilled labor, using only a wrench under almost any weather or ditch conditions.
4 STRENGTH—predetermined; joints safely withstand any specified pressure.
5 TRUE ECONOMY—a truly lower joint cost throughout life of line, plus salvage.

Reducing connections between plain-end steel and/or cast-iron pipe of different outside diameters are easily and quickly effected with Dresser Reducing Couplings, Style 62, furnished in two types—Type 1 for small reductions and Type 2 for large reductions. Each employs same working principle shown in cutaway above.

When your plans are all made—when an absolute dead-line or time penalties have been set—when the pipe line must be completed on schedule to get revenue started or to avoid delaying other parts of the project—then you want a joint that *won't hold you up*—despite rain, snow, swamps, etc.

With "pace-setting" Dresser joints, you are *certain* of getting your line in as fast as you want.

The simple, *standard* Dresser parts permit smooth, steady, uniform speed—faster than the ditcher itself can travel—with no lost motion. No single, slow operation sets up a "bottleneck." Everything is coordinated—moves forward in unison like clock-work. Assembly both above the ditch (safe and practical *only* with flexible Dressers) or in the ditch is *measurably* speeded up.

Results: The length of line laid in a day is the actual length *completed.* Faster installation sharply reduces direct costs, overhead, and interest during construction. And all with the use of unskilled labor—plus joint tightness and flexibility proved for 50 years!

For further details, write for our General Catalog No. 36, a virtual handbook on pipe joints. ● S. R. DRESSER MFG. CO., BRADFORD, PA. *New York:* 17 East 42nd Street; *Chicago:* Peoples Gas Building; *Houston:* Shell Building; *San Francisco:* 1038 Polk Street; *In Canada:* Dresser Mfg. Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER
PIPE COUPLINGS

NEW PRODUCTS

(Continued from Page 50)

for use in 30 days. How could a substance obeying usual chemical laws possess such extraordinary power?

Investigation has built up, however, a considerable factual basis for an explanation of the mechanism of inhibitor action. The deterioration of cracked gasoline begins with formation of peroxides which may be detected long before gum formation begins. In the absence of an inhibitor, these peroxides increase rapidly in concentration, each molecule already formed seeming to catalyze further reaction. When an inhibitor is present, peroxide concentration remains low, the inhibitor being slowly oxidized as by the peroxide molecules but effectively preventing their propagation. A definite correlation has been found between the ease of oxidation of the inhibitor by peroxides, that is its oxidation potential, and the effectiveness as an inhibitor, proving that the essential step in its inhibiting action is its oxidation, which destroys the peroxide early in the game and prevents deterioration getting under way.

The use of inhibitors is rapidly increasing, as more information is gained as to their proper use. It is estimated that 300,000,000 bbls. of gasoline are now inhibited, and that the annual savings in refining costs is over $25,000,000.

One needs but to look about him on the streets to realize how extensively dyes are now used in gasoline and how varied are the hues selected. Dyes remove the need of producing colorless gasoline since they make attractive the shades of yellow naturally occurring in cracked gasoline, thus effecting great savings in treating costs. In addition they give to different brands distinctive appearances.

Compounds used for the commercial dyeing of gasoline are so numerous and belong to so many chemical types that no classification of them in regard to suitability as related to type will be attempted. The azo dyes are the most common, but many are of other classes. Some investigation has been made of inhibitor dyes, made usually from intermediates having considerable inhibiting value, retaining in the dye molecule sufficient inhibiting value so as to fulfill the dual function of coloring and producing stability.

Lead Tetraethyl

No substance added in refining gasoline is more important than tetraethyl lead, a magnificent development in petroleum technology and the basis of a new major industry.

This compound, discovered by Bucton in the year 1859, was a chemical curiosity until found to be a powerful knock suppresser in gasoline. It is made by the reaction of lead sodium alloy and ethyl chloride, sodium chloride being formed as a by-product.

In the early days of the use of tetraethyl lead as antidetonating agent, difficulties were encountered on account of deposition of lead oxide in the motor. This has been overcome by mixing the lead compound with ethylene dibromide and some ethylene chloride, the former reacting with tetraethyl lead to form lead bromide, a volatile compound leaving the motor with the combustion gases.

As the ethylizing of gasoline increased, this caused a tremendous demand for bromine. All of the bromine produced in the United States came from brines pumped from wells in Michigan, Ohio, West Virginia, Texas and Oklahoma, and from sea water bitterns in California. When the use of tetraethyl lead increased to 65,000,000 pounds in 1937, these sources of bromine became inadequate. One of the most unique chemical enterprises in the country was developed to extract the minute traces of bromine present in sea water. The Ethyl-Dow Chemical Co. built a plant at Kure Beach in North Carolina which handles about 8,000,000 gallons per hour of water containing less than 70 parts of bromine per 1,000,000. Two thousand gallons of sea water must be treated in order to obtain 1 pound of bromine. From this and other sources, during 1937, were produced bromine enough to prepare 28,000,000 pounds of ethylene dibromide from the reaction of bromine and ethylene. In addition, about 8,000,000 pounds of ethylene chloride were used during 1937 in ethyl fluid.

In that year about 15,000,000,000 gallons, or 70 per cent of the total gasoline consumed in the United States was treated with an average of 1 cc. of tetraethyl lead per gallon. The average increase in octane resulting from this addition was about 7 numbers, making possible approximately a 5 per cent increase in power output and efficiency of motors, equivalent to conservation of about 750,000,000 gallons of gasoline a year, or expressed in terms of crude oil production, a saving of 40,000,000 bbls. The cost of the tetraethyl lead consumed was about $39,000,000.

Natural gasoline manufacturers have found it economical to redistill their mineral seal oil. In the old days it was discarded as a waste. The simplicity of reclaiming this has prompted most companies to design small units which consist of a small furnace, an expanding chamber with a couple of discarded gas coolers and a small scrubber. The accompanying picture shows a practical installation. Sometimes all that is needed is to bring the temperature of the oil up to 520° F. and run it through the coolers and scrubber. The oil is freed of moisture and is clean

Plant Growth Increases and Anesthetics

Olefin gases from petroleum, notably ethylene, are successfully used to ripen oranges, a fruit of which some varieties, even when fully matured, retain their green color.

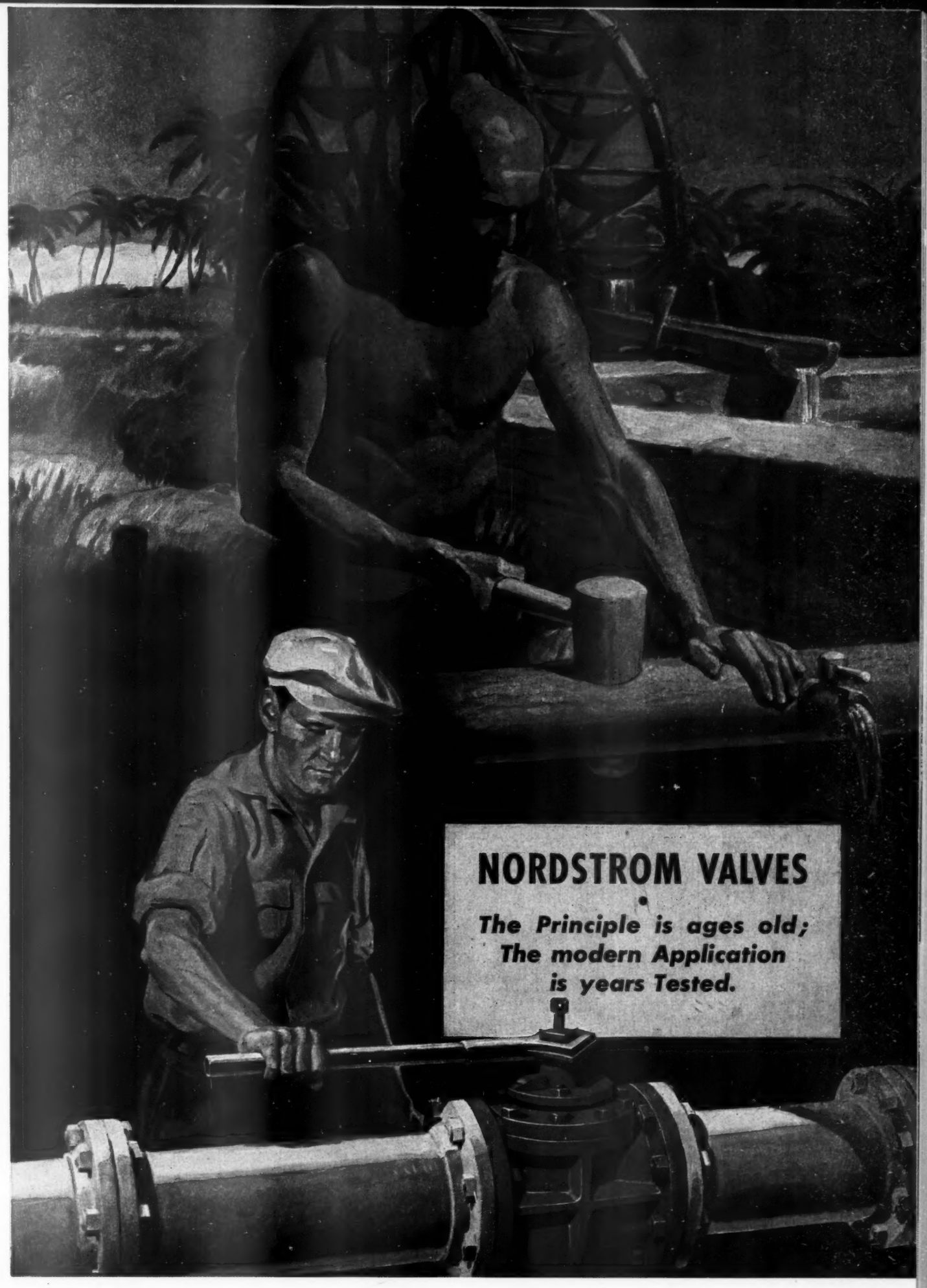
At first the coloring was done by merely diffusing the ethylene through the room or box car containing the fruit. Modern equipment provides humidity and temperature control and applies the ethylene intermittently to discourage rot. It is thought that the ripening is due to the absorption of ethylene by the oils and waxes of the skin.

Ethylene and propene have been used in the stimulation of potato growth and transformation of starch into sugar. Tomatoes, grapefruit, etc., have also been brought to full maturity in a shorter growth season.

Recently, it has been shown that butenes are similarly able to shorten the production season of such trees as walnut, peach, apple, pear, apricot, plum, prune, and cherry. When the season is too short to allow the full maturing, particularly if the winter weather is so prolonged that flower formation and fruit setting are delayed. butene may be used to hasten the growth period. This may be done by enclosing the trees in tents or gas-tight covers about two weeks before the normal leafing, i.e., start of the growth cycle. Butane is passed into the tent in about 1 part per 100,000 parts of air, at temperatures between 69° and 100° F., for a period of one to two hours.

Pentenes, hexenes ,and heptenes from cracked gasoline, and addition products of the unsaturated hydrocarbons derived from cracking such as ethylene diodide, ethylene butyrohydrin, ethylene acetohydrin, and ethylene formohydrin are also used as agents for furthering the ripening of fruit.

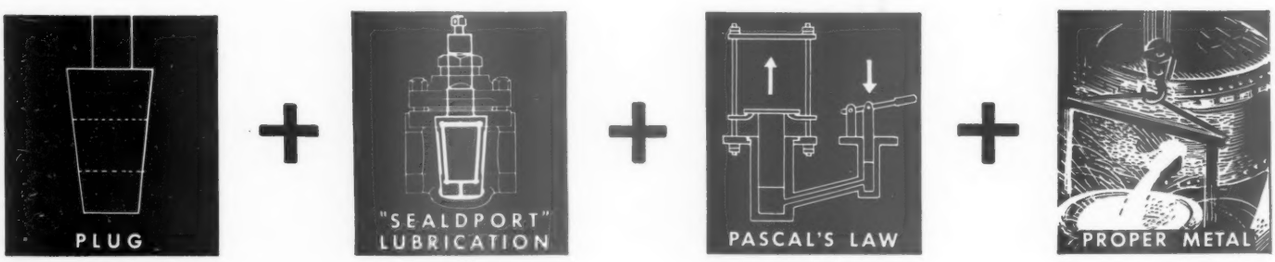
The skin of the green fruit absorbs the olefin or olefin derivatives, destroying the chlorophyll. An advantage in using liquids as ripening agents is that they are absorbed and continue


NORDSTROM VALVES
The Principle is ages old;
The modern Application
is years Tested.

The NORDSTROM VALVE PRINCIPLE

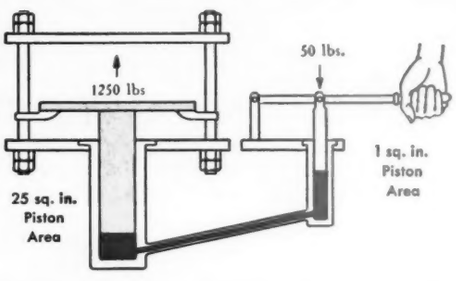
is as old as the hills;

ITS MODERN APPLICATION IS AS ADVANCED AS TOMORROW



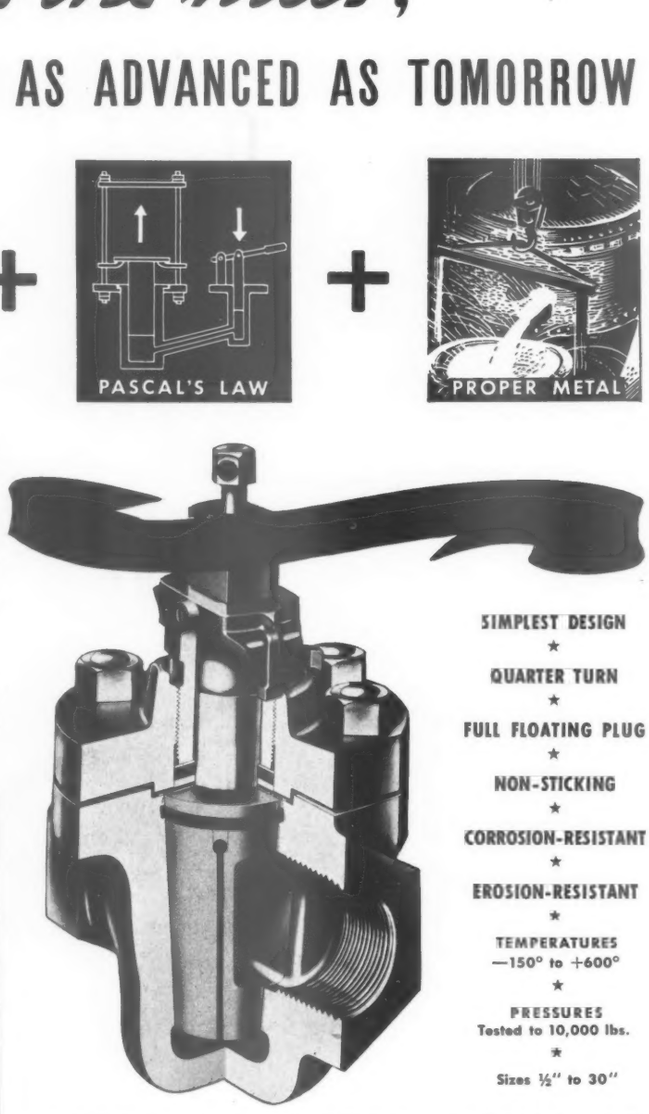
NO MEANS OF CLOSURE is simpler than a plug. Add lubricant and the plug is easier to turn. Add "Sealdport" lubrication and the plug is *always* easy to turn; always sealed against leakage; always tight against its plastic seat. Hydraulic force, effected by merely turning a lubricant screw, raises the plug, should it ever become hard to turn, and instantly frees the plug.

MADE IN A WIDE VARIETY of metals and alloys, Nordstrom Valves are desirable for special as well as general services. Special lubricants are provided.



PASCAL'S PRINCIPLE APPLIED TO NORDSTROMS

PASCAL'S LAW states: "*A unit pressure applied to the liquid contained in a sealed vessel is transmitted to every part of the liquid with undiminished force, thus multiplying the force many times.*" This principle is used in Nordstrom Valves—thus freeing the plug.



SIMPLEST DESIGN
★
QUARTER TURN
★
FULL FLOATING PLUG
★
NON-STICKING
★
CORROSION-RESISTANT
★
EROSION-RESISTANT
★
TEMPERATURES
—150° to +600°
★
PRESSURES
Tested to 10,000 lbs.
★
Sizes ½" to 30"

MERCO NORDSTROM VALVE CO.

A Subsidiary of **PITTSBURGH EQUITABLE METER CO.**

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NORDSTROM VALVES

WITH PATENTED "SEALDPORT" LUBRICATION

their ripening action after removing the fruit from the liquid, which is not the case with gases. After storage under normal conditions the ripening is complete.

The germination of dormant potatoes has been brought about by either dipping or soaking the tubers in ethylene chlorhydrin solution. A distantly related use of a petroleum derivative is the use of ethylene oxide, to fumigate tobacco, cereals and other food products. Insects and insect larvae are readily killed by this gas, and there is no harmful effect when breathed by human beings.

While not a matter of tonnage production, it may well be a matter of pride to the petroleum industry, considering the immense benefit of anesthesia to the human race, that it has among its newer products successful anesthetics.

Ethylene, propene, butene, pentene, and cyclopropane have been shown to have anesthetic effects and the purified gases, usually ethylene, are recommended where the patient cannot be subjected to the after effects commonly noted when ethyl ether is used as they do not introduce the post operative dangers of nausea and pneumonia. Deep surgical anesthesia is readily induced by ethylene, and insensibility to pain coming quickly and there is generally a feeling of well-being and comfort. There is no evidence of harmful after-effects and use of ethylene is recommended for children, diabetics, old persons, and those suffering from advanced ateriosclerosis, or high cerebral pressure.

Propene failed to cause any nervous symptoms. Butene and pentene are less satisfactory, due largely to their greater toxicity.

Cyclopropane though known since 1882, remained a laboratory curiosity until 1930. In December, 1930, it was first applied in human anaesthesia. Since then cyclopropane has been widely adopted and is considered one of the best anesthetics. It is synthesized from propane.

Natural and refinery gases contain hydrogen sulfide from a fraction to over 10 per cent. Several refineries have installed sulfuric acid making plants using hydrogen sulfide from cracking still gases. The largest unit converting hydrogen sulfide to sulfuric acid produces 100 tons of 66° Be. acid per day, and the combined capacity of plants in operation is 75,000 tons per year.

For example, the sodium phenolate process for hydrogen sulfide recovery from cracked gases at the El Segundo refinery of the Standard Oil Co. of California, processes daily 14,000,000 cubic feet of cracked gas containing 4 to 6 per cent hydrogen sulfide by volume and removes 94 to 97 per cent of the hydrogen sulfide, recovering it with a purity between 95 and 99 per cent.

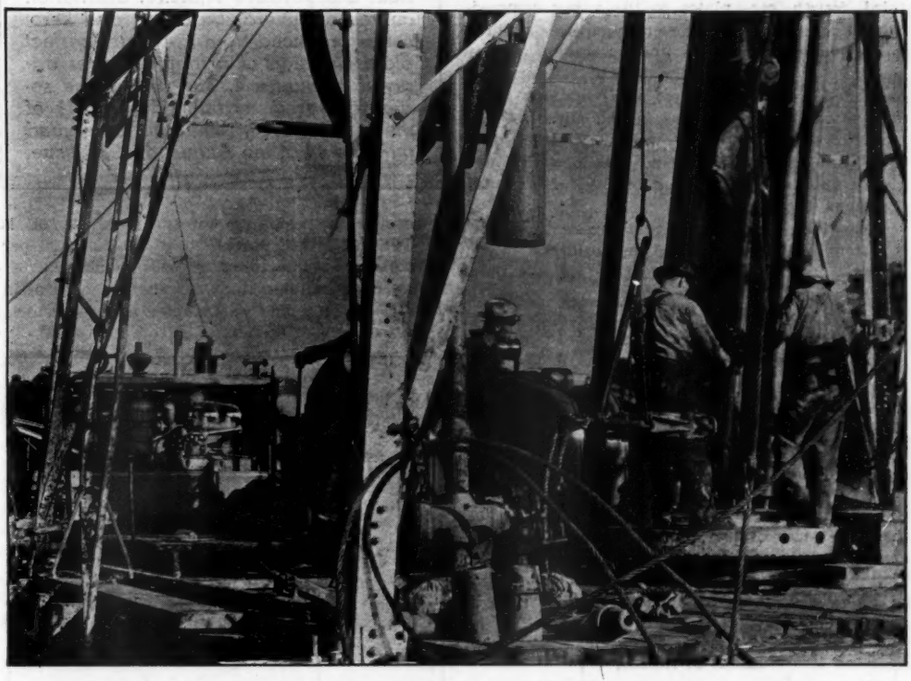
In manufacturing the acid, the hydrogen sulfide is burned so that the combustion products contain sulfur dioxide and oxygen in the proportions required for catalytic conversion to sulfur trioxide. The sulfur trioxide is then absorbed in strong acid in the usual manner.

What makes this competition particularly serious is the fact that the use of sulfuric acid in the oil industry is definitely decreasing, due to the introduction of newer methods of refining, solvent extraction, antioxidants, and dyes. The quantity of acid used in the oil industry in 1936 was 140,000 tons less than that used in 1932, although during the same period of time, the amount of crude oil refined increased from 785,159,000 bbls. to 1,098,516,000 bbls., or 40 per cent. The large volumes of hydrogen sulfide available for conversion to sulfuric acid, and this decreasing demand may place the oil industry in a position to market its acid outside for other than its own uses. The cost of sulfuric acid from hydrogen sulfide is reported materially less than from other sources.

The oil industry could produce more sulfuric acid from the hydrogen sulfide potentially available in natural gas, crude oil and refinery gases than the whole requirement of the United States.

No comprehensive paper on the petroleum industry would be complete without mention of a problem which faces all parts of the oil industry from the drilling of the well to refining the last by-product and a problem which chemistry is helping to combat—corrosion. The corrosion bill for the oil industry of the world is over $200,000,000 a year. Each separate step in processing and each type of equipment, be it storage tank, pipe line, refinery vessel, tankcar, or tank ship, presents its own type of corrosion, which must be met by chemist, physicist, metallurgist or engineer.

SAFETY—Hobble Prevents Fall of Elevators



As a practicable safety device the piece of wire line running through the eye in the waggle-hook and around the elevator links of a drilling rig is probably the outstanding feature in the drilling business. It is called a "hobble" and most contractors, drillers, and roughnecks will insist on its being installed immediately after putting the links on the hook.

Its purpose is to catch the elevator links in case they should jump off of the hook in spite of the spring safety latch, an occurrence all too common. Jumping of the bails generally results from two things, flat drill pipe which will not allow the elevators to slide down, or the failure of the derrick man to unlatch the elevators because of a sticking latch or several other causes.

Elevator links may be light, weighing only 100 pounds or they may be as heavy as 450 pounds. In either case, by the time they fall 90 feet they have momentum enough to do considerable damage to steel and heavy timber and there is always a possibility of their scoring a direct hit on the workman, with fatal results. Experienced roughnecks will "get in the clear" at the first sign that the elevators have jumped the hook even when they know the hobble is in place because there are cases where the hobble was broken and only held the elevator links temporarily.

In its simplest form the hobble consists of a piece of soft-laid wire line passed through the hole in the hook and around the bails and the ends clamped together. Some roughnecks in their spare time make elaborate hobbles of seven-eighths inch soft-laid line with a side bar of a 1240 chain link securely fastened to each end. The ends of the hobble are then bolted to the hook. This cuts down the installation time.

The accompanying photograph also shows a chain from the mud hose to the swivel, which will hold the hose in case the clamp breaks. Breaking of mud hose increases as a source of danger as the pressures mount, and a safety chain on each end of the hose is considered necessary equipment. When a hose breaks under 500 or more pounds pressure, the free end beats around with terrific force, oftentimes doing extensive damage to the derrick.

Removal of the drilling line from the corner of the derrick floor would help from a safety standpoint. Generally, excess line is tied to a girt and hangs outside the derrick, or it is spooled on a wire line reel. This is not only safer but it protects the line from mud and damage from mashing.

Fractionating Complex Mixtures

Simplification of Fundamental Equations

By W. L. Nelson

In the following paper, the third in the series, the fundamental equations presented previously will be applied to a fractionating tower, to indicate the type of products that are produced when using different amounts of reflux. Comparative A.S.T.M. distillation curves of several gasolines and kerosenes produced from a 4-plate (perfect plates) section of a topping tower are given in Figure 4. The first of the series appeared starting on page 41 of the July 21, 1938, issue and the second on page 44 of the August 4, 1938 issue.

Great care must be exercised in applying the equations given in Parts 1 and 2 of this series and hence the exact significance of the equations will be briefly summarized at this point. Equations 8, 10, 11 and 12 in Part 1 are fundamental equations containing all variables so that they can be applied to any case. They relate vapor compositions at the second, third, fourth, etc., plates to the vapor composition at the top of the tower, regardless of how many plates are in the tower. Another set of equations which would be useful, but are not presented in these articles, are equations relating the vapor compositions in and out of a one-plate tower, a two-plate tower, etc. These equations can easily be written by inserting the proper value of "a" in each of the fundamental equations listed above.

Equations 27, 28, 29, 30 and 31 are simplified equations which should not be used for tower systems in which the value of "e" is less than 10. However, the value of "e" is more than 10 for most commercial systems and hence the simplified forms can be utilized in most studies. Should "e" have a value less than 10, the fundamental equations numbers 8, 10, 11 and 12 should be used. In all of the studies that follow in this paper and in subsequent papers, the simplified Equations 27 to 31 will be used if "e" is greater than 10, and the fundamental Equations 8 to 12 will be used if "e" is smaller than 10. The simplified forms were obtained by noting that the series of progressive terms in the fundamental equations are substantially equal for high values of "e" and can therefore be stated as a power function of the terms rather than a series of individual terms.

Effect of Reflux

The tower system shown in Figure 2 was adopted for illustrating the effect of reflux. Four theoretical plates are indicated with the kerosene being drawn from the lowest or fourth plate. The efficiency of the bubble-plates in most commercial plants is such that four theoretical plates are equivalent to about five or six actual plates. The amount of gasoline produced is a function of the degree of fractionation and hence it is indicated as ranging from 28 per cent for the case of Infinite Reflux up to about 30 per cent for a reflux ratio of 1.07. The amount of kerosene cannot be given exactly until the separation between the kerosene and gas oil is studied but it will amount to about 22 to 20 per cent for the same limiting cases as above.

The true-boiling-point analysis of the paraffin base crude oil which was adopted as a feed stock, is shown in Figure 3 and also in tabular form as Column 2, in Table 1.

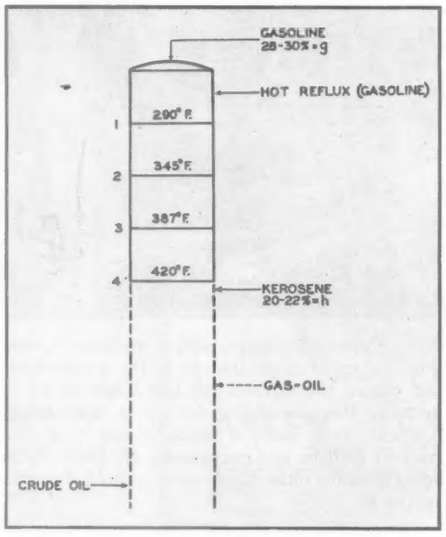


Fig. 2—Diagram of a theoretical 4-plate section of tower for separating gasoline and kerosene

Example Calculation

Actual operating data on a 1,200-bbl. topping plant when processing paraffin base crude oil was adopted as the basis for the following example calculation. In this plant, the actual quantities were:

eR = 14,400 pounds hot reflux = 131.5 mols per hour.

D = 3,415 pounds overhead product = 31.0 mols per hour.

Heat balance reflux or R—

Ref. Heat = 3,415 (420-290)0.52 = 231,000 B.t.u. per hour.

Latent heat of gasoline 126 and mol wt. 110

$$R = \frac{231{,}000}{126} = 1{,}820 \text{ pounds} = 16.6 \text{ mols per hour.}$$

$$e = \frac{eR}{R} = \frac{131.5}{16.6} = 7.92$$

$$\frac{D}{R} = \frac{31}{16.6} = 1.87$$

$$b = \frac{131.5}{31} = 4.25$$

With the exception of e (or b) the above terms were held constant in the following computations, and the amount of reflux was varied by using different values of e. For the case of e = 10, and for a 4-plate tower, the values of the constants are as follows:

e = 10	D
b = 5.35	— = 1.87
R = 16.6	R
eR = 166	g = 28 (approx.)
D = 31	h = 22 (approx.)
	J = 0.626

Equation 29 applies in this case, and it as-

TABLE 1—TABULATED SOLUTION OF FRAC

(1) Fraction No.	(2) C, per cent in crude oil	(3) Temperature range of fraction, °F.	(4) Average B.P. of fraction	(5) K_1 at 290°F. and 1,000 m.m.	(6) K_2 at 345°F. and 1,000 m.m.	(7) K_3 at 387°F. and 1,000 m.m.	(8) K_4 at 420°F. and 1,000 m.m.	(9) K_3K_4	(10) $K_2K_3K_4$	(11) $K_1K_2K_3K_4$
1	14.0	0-250	170	4.10	7.00	11.00	15.40	169.60	1186.00	4860.00
2	2.8	250-270	260	1.17	2.38	3.90	5.60	21.80	52.00	60.80
3	2.6	270-290	280	0.88	1.92	3.10	4.30	13.30	25.60	22.70
4	2.7	290-310	300	0.65	1.40	2.36	3.40	8.00	11.20	7.30
5	2.6	310-330	320	0.47	1.08	1.84	2.70	4.96	4.06	1.91
6	2.2	330-350	340	0.34	0.82	1.45	2.10	3.04	2.50	0.848
7	2.3	350-370	360	0.25	0.63	1.09	1.64	1.79	1.125	0.282
8	2.5	370-390	380	0.185	0.456	0.82	1.28	1.05	0.479	0.0884
9	2.4	390-410	400	0.125	0.34	0.63	1.00	0.63	0.214	0.0268
10	2.6	410-430	420	0.091	0.25	0.48	0.76	0.365	0.0912	0.0083
11	2.5	430-450	440	0.065	0.184	0.364	0.59	0.215	0.0395	0.00257
12	1.4	450-460	455	0.051	0.146	0.300	0.48	0.144	0.0210	0.00107
13	1.3	460-470	465	0.042	0.125	0.254	0.42	0.107	0.0133	0.00056
	...	.....	...	....	....	....	...	....	.....	.....

sumes the following simplified form when all constants except the equilibrium constants are inserted:

$$Y_1 = \frac{100\,C}{28 + 0.626 \times 22\left(\frac{0.162}{K_4} + \frac{0.126}{K_3K_4} + \frac{0.0988}{K_2K_3K_4} + \frac{0.474}{K_1K_2K_3K_4}\right)}$$

This equation can be applied to any component or narrow-boiling-range fraction, but in order to get a complete boiling-range curve of the product, the entire range of fractions must be studied. The percentages of fractions in the original crude oil are tabulated in Column 2, Table 1. The equilibrium constants are then computed by determining the vapor-pressures of the fractions being studied at the four plate temperatures of 290, 345, 387, and 420° F. The vapor pressures are converted to equilibrium constants by dividing by the total pressure which in this case was used as 1,000 mm. The values of the K's are shown in the tabulation as Columns 5 to 8.

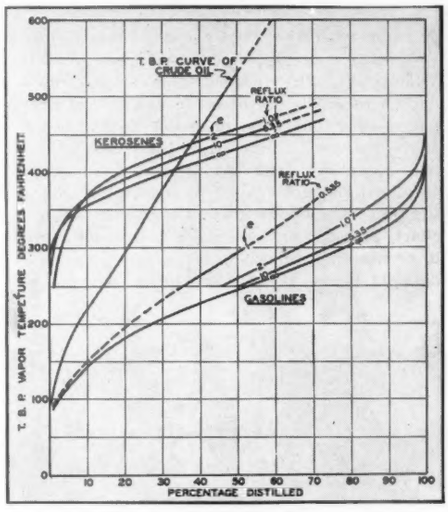


Fig. 3—True B.P. curve of 43 A.P.I. Pennsylvania crude oil and gasolines and kerosenes produced in a 4-plate tower when using different amounts of reflux

Gasoline Fractions

The values of Y_1 or percentages of fractions in the gasoline shown in Column 19, should total to 100 per cent providing the plate temperatures were selected wisely and the total percentages of gasoline and kerosene that were used are consistent with the crude oil being processed. In this example, the total was brought to 100 per cent without attempting to correct Column 19 by changing the operating conditions. The amounts of the various fractions that will be found in the kerosene are given in the final columns. These percentages are probably not valid above 30 or 40 per cent because the high boiling end of the kerosene material will be governed more by the separation attained from the gas oil than from the gasoline separation.

Other Reflux Qualities

The results of several computations similar to the example, are given in Figure 3. In these studies, the following amounts of reflux were employed. In every case, four theoretical plates were used and the other constants of the example were retained except those that are here tabulated:

Reflux ratio b	Value of "e"	Gasoline, % in crude	Kerosene, % in crude	Value of J
0.535	1	< 50	> 0	...
1.07	2	30	20	0.649
5.35	10	28	22	0.626
infinite	infinite	28	22	0.626

Reflux ratio is defined in these discussions as the mols of hot (or internal) reflux at top of tower divided by the mols of overhead product. Note that in the case of least reflux (or e = 1) only enough reflux is used to cool the gasoline product to its outlet temperature and hence no reflux would flow past the kerosene plate or be available to be drawn from the tower as kerosene. Thus in this special case no fractionation would occur and both the gasoline and kerosene would proceed from the top of the tower. In reality this case is merely flash or equilibrium vaporization taking place at the kerosene plate and can be studied by the common methods of handling equilibrium vaporization. Note that Equation 8 simplifies to the following familiar form when the values of e = 1, and a = 1, are inserted.

$$\frac{y_2}{y_1} = 1 \text{ or } y_1 = K_2x_2$$

Although the curve for the material produced when e = 1, as shown in Figure 3, is only approximate, it is felt that it will be adequate and useful for purposes of comparison.

The A.S.T.M. curves shown in Figure 4 are only approximations but they do serve to indicate with fair accuracy, the relative degree of fractionation. The method used in constructing the A.S.T.M. curves from the true boiling curves, was discussed briefly in the paper entitled, "Importance of Distillation Tests in Classifying Oils," The Oil and Gas Journal, page 62, June 16, 1938.

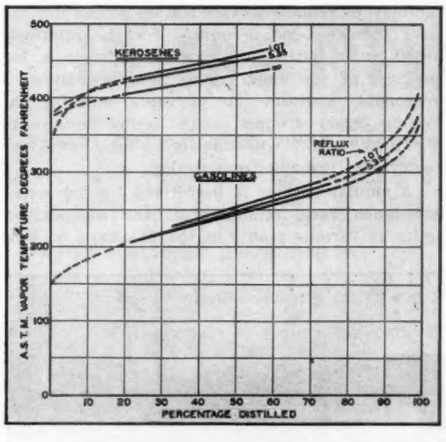


Fig. 4—Approximate A.S.T.M. curves of gasolines and kerosenes produced in a 4-plate tower with different reflux ratios

Montana Bituminous Conference to Hold Meeting in Mid-Continent

The Montana National Bituminous Conference will move into the Mid-Continent area this year and, under the joint sponsorship of the Western Petroleum Refiners Association, the Montana and Mississippi highway departments will hold its four-day forum on asphaltic highway construction and maintenance at the Edgewater Gulf Hotel, Biloxi, Miss., October 10 to 13.

This year's meeting is the fourth in a series of highly successful conferences in which highway engineers and asphalt technologists and chemists from the petroleum industry have met to discuss the best methods and technique to insure successful use of the petroleum industry's production of asphalt for highway paving. The three previous meetings have been held in Glacier National Park, Montana.

Representatives of 35 states and two provinces of Canada have accepted places and will prepare papers for discussion at the Biloxi meeting. All the Mid-Continent states, Rocky Mountain states, Ohio River Valley states and Gulf Coast states are included as well as many Pacific and Atlantic Coast states. Ten papers are being prepared on asphaltic research, construction and maintenance by asphalt industry representatives.

A total of 53 individual papers and reports are being prepared for the 1938 Montana conference. Following the methods of previous conferences only four papers will be presented during the conference. These four, however, will be exhaustive analyses of bituminous practice as described in the individual papers.

The Montana conference takes on added significance this year because of the steady increase in the production of asphaltic highway materials, particularly by Mid-Continent refiners. In the last six years, a recent survey discloses, Mid-Continent refiners have increased their production of the higher grades of asphalt more than 400 per cent, an effort which has caused the investment of tremendous sums in more advanced equipment. A meeting such as the Montana conference, which brings about better methods of using the asphaltic production also results in increased consumption.

TIONATION STUDY FOR A 4-PLATE TOWER

(12) 0.162 / K_4	(13) 0.126 / K_3K_4	(14) 0.0988 / $K_2K_3K_4$	(15) 0.474 / $K_1K_2K_3K_4$	(16) Sum of Cols. 12, 13, 14, and 15	(17) Col. 16 times 22×0.626	(18) Col. 17 plus 28	(19) Y_1, 100 × Col. 2 divided by Col. 18	(20) Y_1, Col. 19 to 100% basis	(21) Gasoline, cumulative per cent	(22) X_2, 0.626 × Col. 16 × Col. 20	(23) Kerosene, cumulative per cent
0.0105	0.000743	0.000083	0.000097	0.01142	0.1572	28.15	49.9	50.3	50.3	0.36	0.36
0.0289	0.00578	0.00190	0.0078	0.0444	0.611	28.6	9.8	9.9	60.2	0.273	0.633
0.0377	0.00945	0.00386	0.0209	0.0719	0.99	28.99	8.97	9.0	69.2	0.408	1.041
0.0476	0.01574	0.00882	0.065	0.1372	1.89	29.89	9.05	9.1	78.3	0.786	1.827
0.0600	0.0254	0.0233	0.248	0.3567	4.91	32.91	7.90	8.0	86.3	1.758	3.585
0.0772	0.0415	0.0325	0.559	0.7102	9.77	37.77	5.84	5.9	92.2	2.59	6.175
0.0988	0.0704	0.088	1.68	1.937	26.60	54.6	4.21	4.2	96.4	5.10	11.275
0.1265	0.120	0.206	5.37	5.822	80.0	108.0	2.32	2.31	98.71	8.42	19.695
0.162	0.200	0.461	17.7	18.52	254.0	282.0	0.851	0.85	99.56	9.9	29.59
0.213	0.345	1.083	57.0	58.64	805.0	833.0	0.312	0.31	99.87	11.44	41.03
0.275	0.585	2.5	184.4	187.8	2580.0	2608.0	0.096	0.10	99.97	....	....
0.338	0.875	4.7	443.0	449.0	6160.0	6188.0	0.023	0.02	99.99	....	....
0.385	1.179	7.41	847.0	856.0	11750.0	11778.0	0.011	0.01	100.00	....	....
....	....	....	....	....	.....	.....	99.283	100.00	.....	....	....

Modern Bulk Plants Conserve Light Fractions of Motor Fuel

By H. STANLEY NORMAN

Some of the disparity between laboratory and highway performance of motor fuel has been eliminated by technical developments in storage of motor fuel where light ends of gasoline are subjected to vaporization action at atmospheric temperatures. Currently, this problem of correlating road and laboratory performance of gasoline is receiving undivided attention of hundreds of chemists, automotive and refinery engineers. By storing motor fuel in pressure tanks or in systems where vented vapors are retained in a balloon tank and later condensed for return to the source a dual accomplishment is obtained. In the first place and most important from a consumer standpoint is retention of the more volatile hydrocarbons in the state existing on completion of motor fuel production in the refinery. From the petroleum industry's standpoint application of pressure storage effects a saving conservatively estimated at 6 gallons per annum for each square foot of exposed gasoline surface in conventional storage systems unqualified to withstand much more than atmospheric pressure from within.

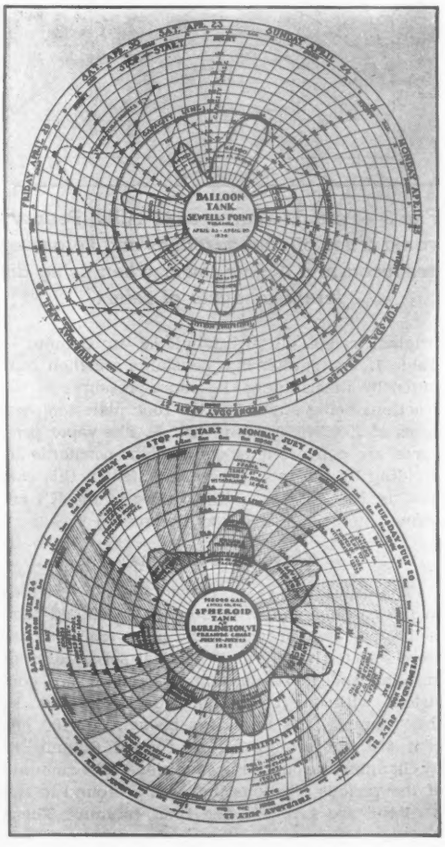
Spheroid Tanks

Adoption of spheroid tanks for new storage where practical and balloon tanks to operate in conjunction with existing cylindrical vessels which are still serviceable has been practiced extensively by Standard Oil Co. of New Jersey. The company has 31 pressure tanks in service storing finished motor fuel, 4 are being constructed and 9 have been scheduled for erection. Cost of the new spheroid varies from 30 to more than 75 per cent, depending upon size, more than the conventional tanks. The extra cost is offset by the saving in motor fuel, none of which need be lost by evaporation by predetermining pressures to be controlled and making provision accordingly.

Balloon Type Tanks

The balloon tank arrangement installed by Standard of New Jersey at Sewells Point, Va., affords an especially interesting typical application of the closed storage concepts for motor fuel. In this system, the balloon tank functions as a "breather" for cylindrical tanks which have not yet outlived their usefulness. This application avoids the necessity of scrapping serviceable cylindrical tanks but at the same time retains fractions of the motor fuel ordinarily vaporized and permitted to escape through safety vents to the atmosphere. The installation has a capacity of about 71,000 cubic feet of vapor. In the accompanying chart which is a reproduction of actual service conditions in the week of April 23-30, 1938, the effect of atmospheric temperature on vaporization is diagramatically presented. During the representative week capacity of the balloon was most nearly reached on April 24, Sunday, not because of excessive temperature rise but because no withdrawals were made during the day. Heavy demand from the bulk plant on Monday to replace service station stocks drained over the week-end accounted for the relatively small accumulation of vapor in the balloon. Remainder of the week, up to Saturday, shows a reasonably uniform rate of vapor capture. The volume again dropped on Saturday because of the heavy plant withdrawals to meet week-end motor fuel demand from dealers.

A similar service is performed by the spheroid tanks built as individual and independent units at various points in the Standard of New Jersey marketing territory and in areas served by subsidiary concerns. A case in point is at Burlington, Vt. The individual tank on which a week's record is presented in chart form has capacity of 23,000 bbls. of motor fuel. The chart shows pressure, temperature, inventory, additions and deductions from storage and engineers' calculations on vapor saved by a formula based on the preceding known factors. As indicated by the chart, pressure on the spheroid dropped at night to or near the atmospheric line rising during the daylight hours, usually reaching a peak at 3 p.m.

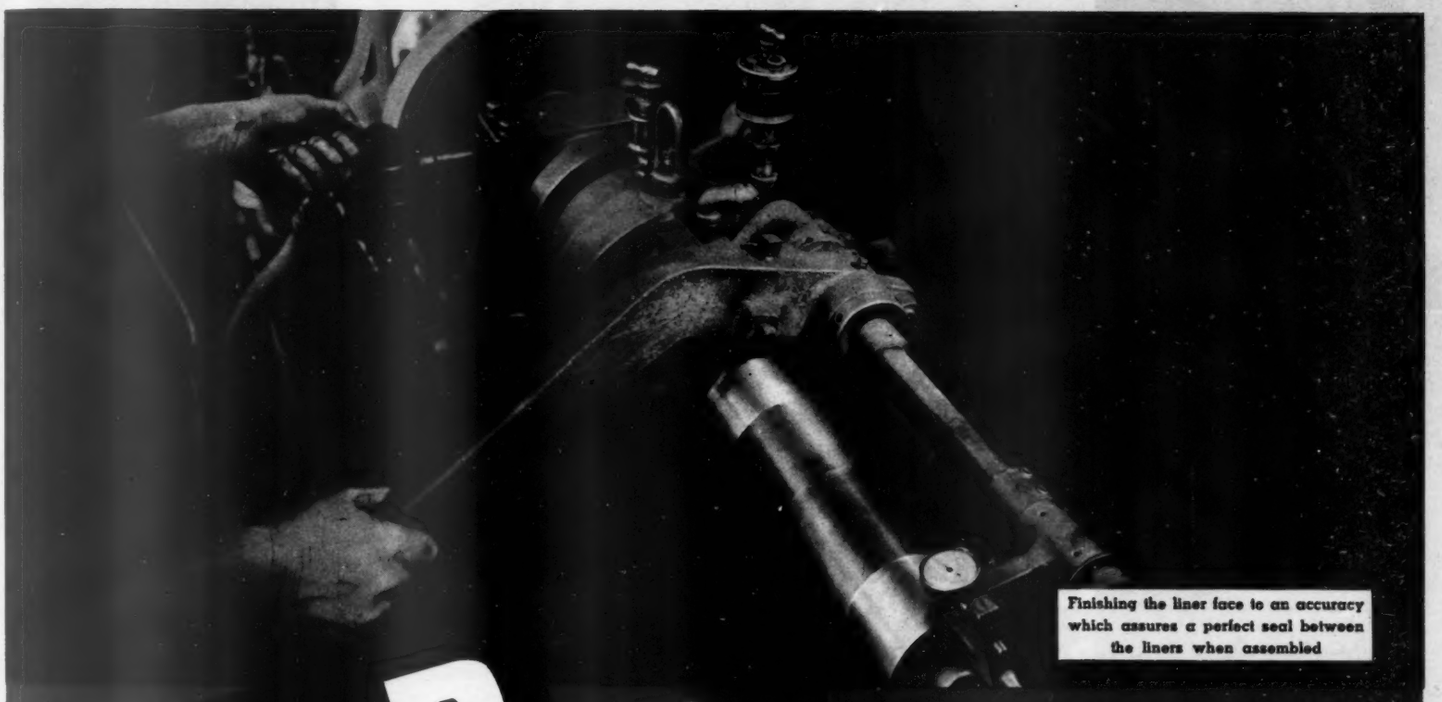


Temperature curves on tanks at Sewells Point, Va., and Burlington, Vt.

This result correlates as would be expected, in the balloon system at Sewells Point.

Application of the motor fuel pressure storage principle has proven particularly sound practice at points along northern water routes which are isolated for six or more months during the year by ice. Stored in pressure tanks motor fuel has been found to retain its original hydrocarbon structure over a period of months and as a result the original quality is retained.

Three 55,000-bbl. tanks and two 18,000-bbl. tanks, all in gasoline service, are tied into a common system and vent into the 114-foot balloon shown here. The installation was made by the Standard Oil Co. of New Jersey at Sewells Point, Va.



Finishing the liner face to an accuracy which assures a perfect seal between the liners when assembled

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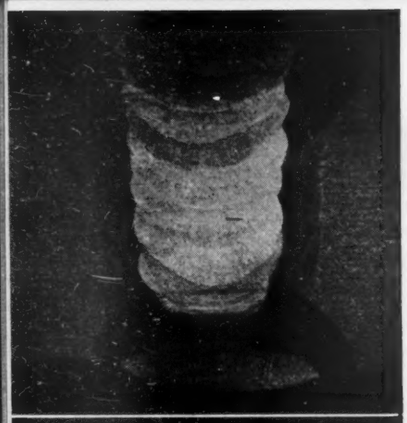
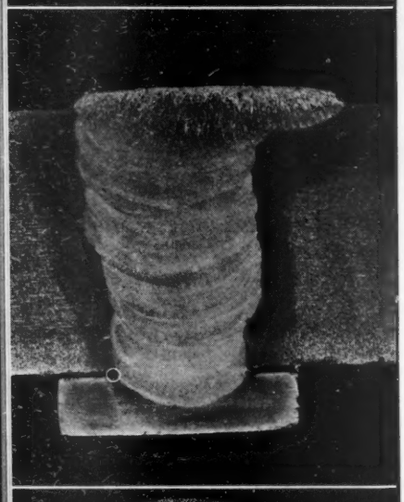
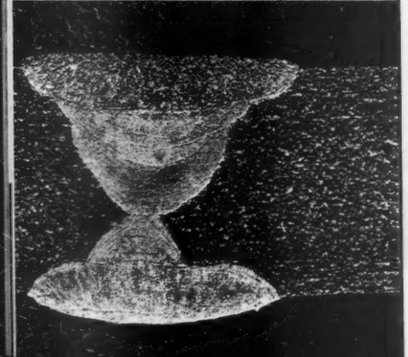






Acid Etching Weld Test

By ORVILLE T. BARNETT
Metallurgist, Black, Sivalls & Bryson, Inc.

In welding, very often the simple and less complex practices are passed over in the search for something better. The art of weld-testing has progressed during the past years until a great many tests may be given. However, some of the tests that are becoming popular can only be made with the aid of expensive apparatus.

On the other hand there are simple tests that may be used in conjunction with the more complex tests. Acid etching of welds and plates may rightfully be classed as a most simple test and certainly requires no elaborate setup.

In modern control laboratories as well as in many refineries acid is being used to tell welding stories. Simple welding procedure control is being effected through the use of acid etching. Two acids may be used: One for a cold etch; the other for a hot etch. The formulae for these are given later.

The cold etchant is very rapid in action in comparison with most solutions used in macro examinations, thus affording a quick means for checking weld quality. An etch of one to three minutes followed with a gentle alcohol wash (being careful not to disturb the resulting deposit) is practicable. Not only the grain structure of the weld and plate is brought out but also the dark areas which represent the width of the heat-treated zone.

Use of Hot Etchant

The hot etchant is of great value in revealing inclusions of the parent plate, in comparing the corrosion resistance of the weld to that of the plate and in bringing out weld defects that a milder solution will not reveal such as small porosities. In addition the hot etchant will show grain structure and heat-affected zone although the latter is best determined by the cold etchant. A suggested procedure follows:

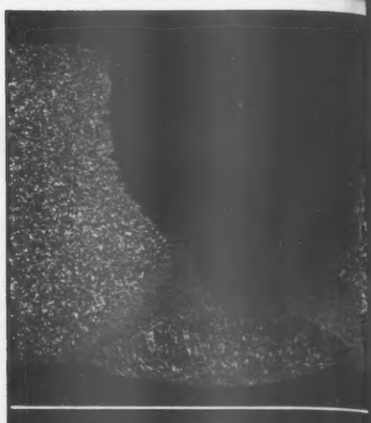
1. The specimen is cleaned of oil and grease in carbon tetrachloride or some other oil solvent.
2. The sample is then placed in water and heated to 160° F.
3. With the etchant at 160° F., the sample is immersed and held at this temperature for 25 minutes.
4. Wash specimen in water and scrub to remove any deposits. Then alcohol rinse and air dry.

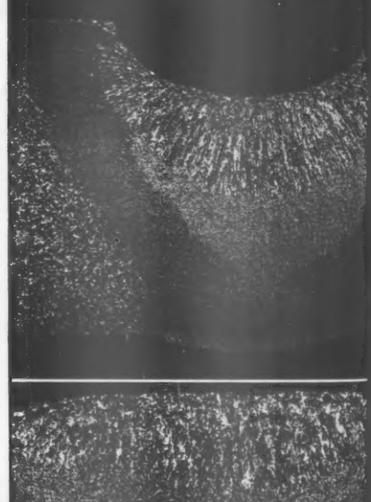
Note—When drying any etched specimen the alcohol is used only to aid drying and prevent discoloration. Compressed air affords a desirable means for drying the specimen.

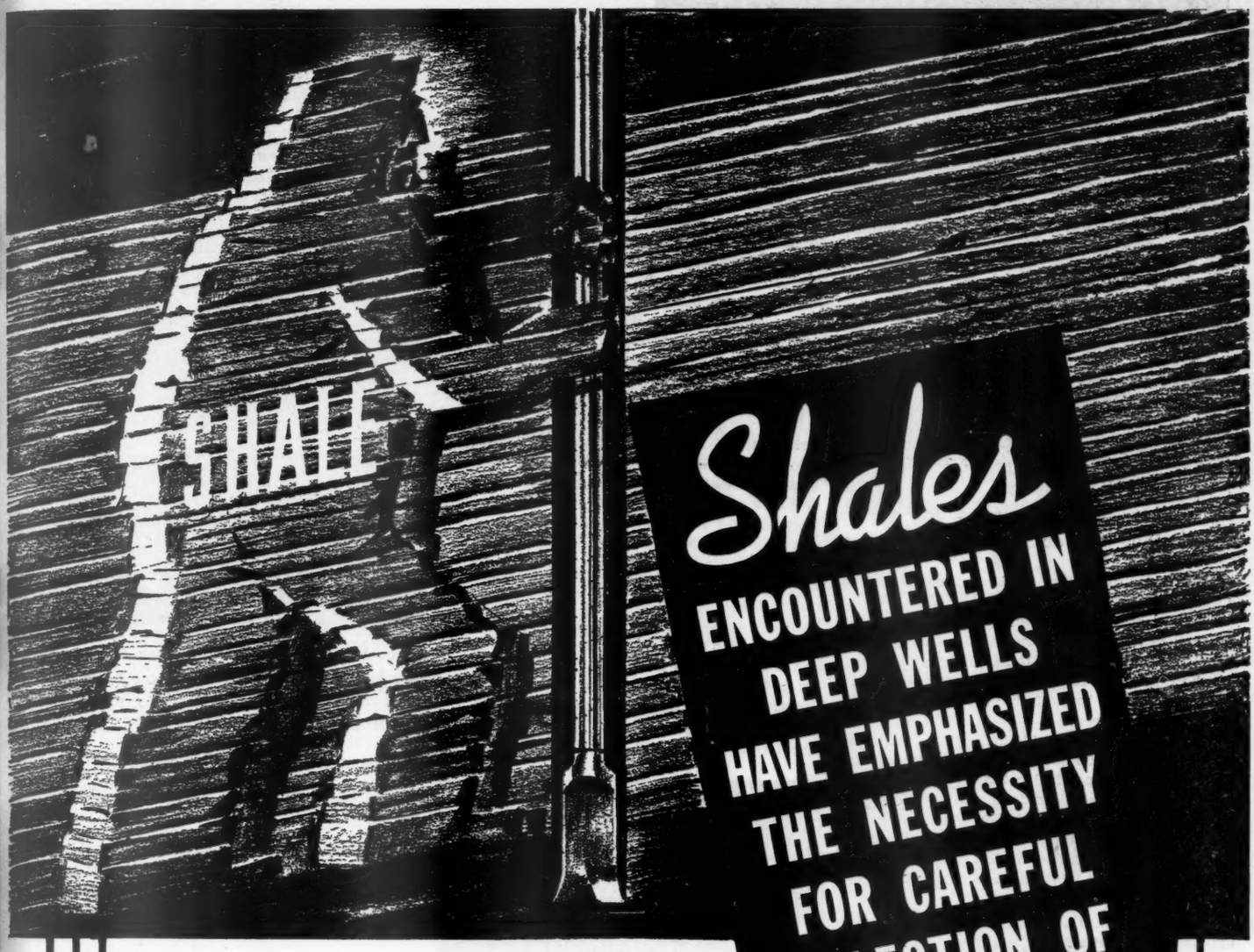
Acid etching of welds as described here is for the purpose of examining the welds as seen with the naked eye. This is known as macroscopic examination as differentiated from microscopic examination which requires a microscope to reveal structural characteristics. Fortunately, the polishing of the specimen for macroscopic purposes is quite simple.

Figure numbers, top to bottom: Fig. 1—Heat affected zone of double butt-weld; Fig. 2—Crystal structure of a fillet weld; Fig. 3—Crack in weld at back-up bar; Fig. 4—Area of white circle of Fig. 3 enlarged 100 times; Fig. 5—Macrograph of good weld and portion of the plate

Figure numbers, top to bottom: Figs. 7, 8, 9, 10—Typical examples of multi-pass welding to show the refining action accomplished; Fig. 11—Heat-affected zone. Note excellent definition of the many beads. This weld was made on 2 3/4-inch steel using more than 40 passes







Shales ENCOUNTERED IN DEEP WELLS HAVE EMPHASIZED THE NECESSITY FOR CAREFUL SELECTION OF DRILLING MUD

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NATIONAL PIGMENTS & CHEMICAL DIVISION OF
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For the cold etchant a file polish or ground surface gives the best results; for the hot etchant a file polish is sufficient. In some instances a smooth saw cut will reveal the requisite information with the hot etchant.

Cold Etchant

The cold etchant reveals heat-affected zones, crystal structure and gross defects in a few minutes. These properties are discussed and illustrated here.

Heat-affected zones: Figure 1 shows the heat-affected zone of a double butt weld in a plate 1½ inches thick. The dark semicircles at the top and bottom are a result of the beads near the surface of

Fig. 6—Dirty steel as indicated by hot acid

a hot, thick weld where the heat dissipation in a large mass of steel is lessened. In the center of this weld the insulating effect of the air is much less pronounced, giving a more narrow heat-affected zone. The cold plate tends to narrow this zone, too. As the weld nears completion, the plate is hot, resulting in a wider band of high temperature which is quite readily seen.

In mild steel less than 1¼ inches thick the heat-affected zone is of minor importance. But in the low alloys and, in particular, the 4-6 per cent chromium steels where aid hardening is to be avoided, this zone becomes extremely important. Welding technique must be adjusted to give as small a heat affected zone as possible. Welding rods, welding heat and plate heat must all be studied in order to minimize air-hardening tendencies.

Crystal structure: In addition to revealing the extent of the heat-affected zone, the cold etchant brings out crystal structure. Figure 2 illustrates the crystal structure of a fillet weld brought out by the cold etchant. The top bead has a coarse dendritic structure common to beads that have not been normalized by the action of a superimposed bead. See how readily the various structures of the weld are brought to light.

Gross defects: Slag, porosity, lack of fusion and cracks are revealed by the cold etchant when the defect is of some size. In the illustration, Figure 3, may be seen a small crack in a weld next to the backup bar. This crack was very small but clearly visible to the naked eye. To study the problem further the crack was sectioned and placed upon the microscope where the full structure could be seen. Figure 4 is the area in the small white circle as seen under the microscope at 100 X. Under the microscope the full extent of the crack is discernible.

Summing up the use of the cold etchant in routine laboratory control of welding we find it applicable for the study of heat-affected zones, crystal structures, slag inclusions, porosities and cracks.

Hot Etchant

Turning to the hot etchant we find its principal uses the study of the relative corrosion resistance of weld and plate and the revelation of small defects in both weld and plate. In addition it will bring out crystal structure and heat-affected zones.

Corrosion resistance: Most modern weld rods are more corrosion resistant than the plates they join. However, to detect those that are not good resistors as well as to keep a continual check on welding procedures, the hot etchant is utilized. In Figure 5 is shown a good weld joining good plate

COLD ETCHANT

Acetic acid (28 per cent)	4 parts
Nitric acid (cone)	1 part
Methyl alcohol	1 part

Use full strength cold.

HOT ETCHANT

Hydrochloric acid (cone)	1 part
Water	1 part

material. The white weld stands out against an even gray plate. No dark places indicative of voids are present in either the weld or the plate. No dark beads are present showing good welding procedure with positive exclusion of harmful nitrogen and oxygen from the molten metal comprising the weld. The entire area of the weld cross section is raised above the plate which was attached more by the etchant than was the weld.

Dirt in steel: Dirty steel discloses elongated voids after treatment with the hot acid. Since dirt may lead to imperfect fusion in addition to excessive porosity, it is important that a constant check of sources of material supply be maintained. Figure 6 is a good example of the effect of dirty steel upon a weld. Numerous porosities along the fusion zone are in evidence.

Crystal structure: Figures 7, 8, 9 and 10 show the refining action of multi-pass welding. Each bead normalizes the one beneath it with a resulting increase in weld ductility. By a series of macrographs such as these the hot etchant may be utilized for a procedure control that will bring about proper grain structure in a weld.

Heat-affected zone: Finally the hot etchant will reveal (not as well as the cold etchant, however)

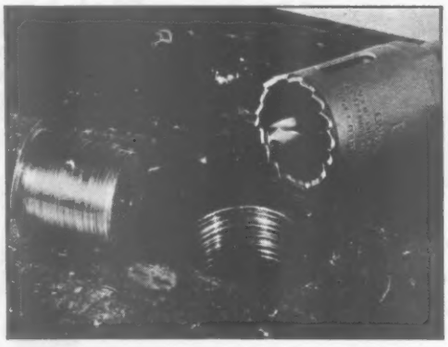

Fig. 12—Method of taking plug sample from weld for etching

heat-affected zones as illustrated in Figure 11. Note, too, in this photograph the excellent definition of the many beads used. This weld in 2¾-inch plate was made with over 40 passes.

So the hot etchant will disclose corrosion resistance, dirt, crystal structure and heat-affected zones. By keeping a constant check on these variables through the use of this simple practice, usual welding troubles may be quickly and economically diagnosed.

Trepanning: The practice of trepanning (cutting a plug from weld) offers another means of using acid to check welding control. In this case the specimen may be taken from the welded seam

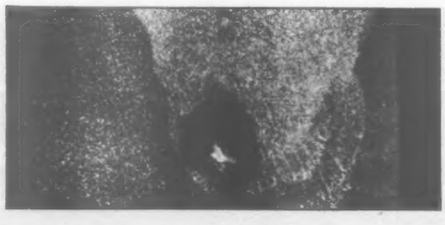

Fig. 13—Etched plug from Fig. 12

in question. The resulting hole being repaired with a threaded plug and sealed with weld metal. Figures 12 and 13, showing the hole and etched plug, are self-explanatory.

This type of test, while not always desirable to use, can be of great worth in the random testing of finished welds when X-ray is not available. Tre-

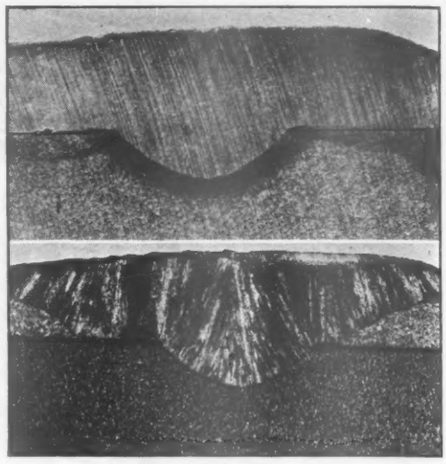

Fig. 14—(Top) Plug weld cross section cold etched to show heat effect on base plate. Specimen then hot etched to show weld structure illustrated in Fig. 15 (bottom)

panning is used quite extensively in checking weld quality in field-erected jobs and by insurance companies in inspecting old vessels which are located in the field.

Plug welds: Figure 14 shows a plug weld cross section that has been cold etched to bring out the heat effect in the base plate. The specimen was then hot acid etched to reveal the weld structure and is illustrated in Figure 15.

Conclusion

The writer has attempted to show the possibilities of a weld test that is within the reach of any one connected with the welding industry. It is not recommended that acid etching be relied upon to the extent of doing away with physical tests. However, the practice of acid etching of welds has proven to be, in many cases, an indispensible aid to the betterment of welding when it is used in routine control.

Oklahoma Refiners Protest Asphalt Discrimination

Vigorous protest has been made by the Western Petroleum Refiners Association against a proposed W.P.A. project for Oklahoma highways which would exclude petroleum asphalt from consideration as a surfacing material and accept only rock asphalt as the surfacing material.

The project, to cost $2,500,000, includes some 300 miles of Oklahoma highways, and according to the project announcement, only rock asphalt would be acceptable. Petroleum asphalt, with which the Oklahoma Highway Department has had highly satisfactory results in recent years, would not be considered in the proposal.

"Exclusion of petroleum asphalt manufacturers from this project," A. V. Bourque, secretary-treasurer of the refiners' association, wired Harry Hopkins, W.P.A. administrator, "is an unjust discrimination against the state's largest taxpayer. Oklahoma as a petroleum state has a large annual production of petroleum asphalts which have proved highly efficient for road surfacing and extremely economical."

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with these

Some of our customers have wanted a ball-and-seat type float shoe, but they wanted it Larkin-engineered, of Larkin quality and dependability . . . . . Well, here it is, and here are its four big points of superiority:

1. The Bakelite ball is *ground* perfectly round, so that it *seals* perfectly—a feature impossible to secure in any other make of equipment.
2. There is a 25% larger opening *entirely* through the shoe than can be secured in any other equipment.
3. There is 8" of concrete over the valve seat (as in *all* Larkin Float Shoes), more concrete than is provided in any other equipment. This insures more than ample strength for the back pressure valve.
4. The Guide is made of shock-resistant Bakelite—impossible to secure with any other equipment.

Fig. 428

If you like a ball-and-seat type float shoe, you'll be enthusiastic about this new Larkin achievement. Keep in mind, too, that we still make the famous Larkin Poppet-Type Valve—just as popular as it ever was.

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Aromatic Compounds Derived From Mid-Continent Petroleum

Does the ordinary Mid-Continent crude oil contain any aromatic hydrocarbons which could be present in the gasoline? If any, what is the percentage?—O. A.

There are several types of petroleum produced in the Mid-Continent district, which naturally means a great difference in the nature of the hydrocarbons present in the several oils. There has been only one thorough investigation of this crude oil, that being conducted in the U. S. Bureau of Standards under Doctor Rossini. This study has been under way for several years, during which time the hydrocarbons in several fractions have been quantitatively separated. The table contains the aromatic hydrocarbons that have been isolated from the fractions distilling up to 374° F.

AROMATIC HYDROCARBONS IN MID-CONTINENT PETROLEUM

Hydrocarbon—	Formula	B.P.	Per cent in crude oil
Benzene	C_6H_6	80.2	0.08
Toluene	C_7H_8	110.5	0.30
Ethyl benzene	C_8H_{10}	136.1	0.03
p-xylene	C_8H_{10}	138.4	0.04
m-xylene	C_8H_{10}	139.2	0.12
o-xylene	C_8H_{10}	144.4	0.12
Isopropyl benzene	C_9H_{12}	152.4	0.03
Hemimellitene	C_9H_{12}	....	0.06
Pseudocumene	C_9H_{12}	....	0.20
Mesitylene	C_9H_{12}	....	0.02

The total quantity of aromatics present in Mid-Continent crude oil is, according to this investigation, 1 per cent.

Reference: Frederick D. Rossini, The Oil and Gas Journal, May 16, 1935, page 61, and November 12, 1937, page 193.

Crude Oil From Noble Pool, Illinois

Could you give me a test showing the yields from Noble pool oil in Illinois?—W. H. T.

ANALYSIS OF OIL FROM NOBLE POOL, ILLINOIS

Gravity, A.P.I.	39.2
Pour, °F.	—30
Sulfur total, per cent	0.13
Visc. S.U. at 100° F.	41
Color	dark green
Distillation:	°F.
Initial B.P.	84
Per cent off:	
5	138
45	499

Yield: Product—	Per cent	Gravity
Gasoline, 400 e.p., octane No. 50	39.2	57.6
Kerosene	7.0	38.9
Gas oil	7.0	36.4
Wax distillate	21.0	30.2
Residue	23.6	22.6

This is an analysis indicating the quantity of products that may be obtained by the straightrun operation.

S.A.E. Lubricating Oil Specifications and Credits by Federal Rules

What are the S.A.E. specifications for lubricating oils and transmission oils? What are the recommended practices as to viscosity requirements of the spread; is the low or high side of the viscosity range recommended?—R. M. S.

Specifications for lubricating oils, designated by S.A.E. numbers, are shown in Federal Specification VV-O-496, for six grades of class D oils. These shall be pure petroleum oils without admixture of fatty acids, resins, soaps, or other nonhydrocarbon materials.

The viscosity requirements are indicated in Table 1.

TABLE 1—S.A.E. AND SAYBOLT UNIVERSAL VISCOSITY EQUIVALENTS

S.A.E. No.	Seconds at 130° F. Not less than	Seconds at 130° F. Less than	Seconds at 210° F. Not less than	Seconds at 210° F. Less than
20	120	185	...	...
30	185	255	...	...
40	255	...	...	75
50	...	...	75	105
60	...	...	105	125
70	...	...	125	150

In addition to meeting limiting requirements for each item, at least four credits are required.

Viscosity—Limitations shown in Table 1: One credit if the viscosity found at 130° F. is not higher than that given at 130° in Table 2, corresponding to the found viscosity at 210° F.

TABLE 2—VISCOSITY LIMITS OF GRADES
(Viscosity, seconds, Saybolt Universal)

At 210° F.	At 130° F.	At 210° F.	At 130° F.	At 210° F.	At 130° F.
50	146	85	460	120	804
55	188	90	508	125	855
60	232	95	556	130	906
65	276	100	605	135	957
70	321	105	654	140	1,009
75	367	110	704	145	1,062
80	413	115	754	150	1,114

Flash — One credit if not below "For credit" temperature shown in Table 3.

Pour—Minimum 40° F. pourpoint of 0° or 15° may be required for S.A.E. 20 and 30. One will be allowed if the temperatures shown in Table 3 "For credit" are not exceeded.

Color—One credit given as indicated in Table 3.

Carbon residue—Passing and one credit allowances shown in Table 3.

Oxidation number—Sligh number shall not exceed 50. One credit given if it does not exceed 20.

Neutralization number—Not above 0.30 for each grade. One credit given if it is not above 0.10.

Corrosion—Negative to copper strip test at 212° F. for three hours.

Table 2 is too large to be used here so a part is shown simply for illustration.

Viscosity is commonly stated as a minimum requirement so anything higher would be above the stipulation. However, the inclusion of a range from minimum to maximum should always be stated in a contract. This practice should be followed for each property.

Chemical Corrosion of Pipe Parts Per Million and pH Value

Chemical action is known to be responsible for much of the external corrosion of pipe. Liability of soil or water to corrode is often determined by testing with indicator dyes and expressing in pH values. There is sometimes available chemical analyses of natural waters stated in parts per million. Is there any way the pH value of a water, or soil extract, can be determined from a given analysis in parts per million?—S. H. H.

The pH value, or hydrogen ion concentration, is the logarithm of the reciprocal of the gram ionic hydrogen concentration per liter, indicated by

$$pH = \log \frac{1}{(H^+)}$$ per liter. A titrated solution at the neutral point has the same concentration of hydrogen ions, H, and hydroxyl ions, OH^-, as water, which is $H\ 10^{-7}$ and $OH^-\ 10^{-7}$ moles per liter or a pH value of 7. This means that the neutral point is pH 7. If the pH is below 7, acid is indicated, and above, alkaline.

There are reference tables available, in the standard text, which give the ionization rates for the several acids. These show percentage of acid, moles per liter and grams per liter for each pH value. From these, the parts per million may be calculated.

A pH value of 3 for a solution of HCl is equivalent to 0.001 gram H per liter; therefore one part per million. A solution of sulfuric acid showing a pH value of 1.8 means 0.016 grams H per liter, which is 16 parts for million.

Such estimations can be reliable from data of soil or water analyses only when the acid is of one kind, or the exact quantities of each of a group are known. The pH value is a total figure and if it is desired to convert to parts per million or vice versa the analysis showing specific composition should be available. Under ordinary circumstances this type of an expensive analysis would not be warranted, because the pH value is a sufficient indication.

One could make a calculation from parts per million of a water analysis to a pH value but the resulting figure would probably not reflect the true pH value of the water.

TABLE 3—FLASH, POUR, COLOR, AND CARBON RESIDUE

S.A.E. No.	Minimum flashpoint °F. For passing	Minimum flashpoint °F. For credit	Maximum pourpoint, °F. For passing	Maximum pourpoint, °F. For credit	Darkest A.S.T.M. color number For passing	Darkest A.S.T.M. color number For credit	Maximum A.S.T.M. carbon residue, % For passing	Maximum A.S.T.M. carbon residue, % For credit
20	340	400	40	0	7½	5	0.60	0.10
30	350	410	40	0	8	6	.80	.15
40	370	425	40	5	6 dil	7	1.00	.25
50	395	445	40	10	7 dil.	7	1.40	.40
60	425	475	40	15	8 dil.	8	1.70	.70
70	460	510	40	15	8 dil.	8	2.00	1.00

CHEMICALS FOR THE PETROLEUM INDUSTRY

Zinc Chloride

Use—Treating for gum removal, color stabilizing and sulfur reduction. Preservative and disinfectant preparations.

Form—White deliquesent granules.

Formula—$ZuCl_2$.

Molecular weight—136.

Specific gravity—2.91.

Melting point—504° F.

Boiling point—1,346° F.

Solubility—Water and organic solvents.

LIMITATIONS

Purity, per cent, min.	95
Insoluble, per cent, min.	0.1
Heavy metals, per cent, min.	0.1

Note—Available in solution; shipments in drums, cans and tankcars.

Announcing

OUR 12th ANNUAL

PIPE LINE ISSUE

Sept. 22

COVERING
PIPE LINE
ENGINEERING
CONSTRUCTION
OPERATION
MAINTENANCE

VALUABLE FEATURES FOUND IN THIS ISSUE

SPECIAL EMPHASIS ON OPERATING IDEAS. The 12th Annual Pipe Line Number of The Oil and Gas Journal will stress the practical operating developments, commonly called "kinks" and "gadgets," which have been introduced by the Pipe Line Industry during the past 12 months. Several pages of illustrated suggestions will cover this subject thoroughly.

INDIVIDUAL MAPS OF ALL U. S. GASOLINE PIPE LINE SYSTEMS. Also individual maps of many of the larger crude oil and natural gas pipe line systems.

EXHAUSTIVE EDITORIAL REVIEW of pipe line construction and operation for the preceding 12 months. Also a number of technical articles, by leading authorities, that will discuss fully the latest pipe line equipment and engineering methods.

PIPE LINE PERSONNEL DIRECTORY. A complete directory listing all pipe line executives and key operating men.

Due to its high degree of interest for pipe line company executives, engineers, superintendents and operating men, and pipe line contractors—the 12th Annual Pipe Line Number of The Oil and Gas Journal will prove of outstanding value to manufacturers and distributors who sell to the Pipe Line Industry. In this issue your advertising message will reach the key men who specify the equipment used by the entire Industry.

Make your space reservations right away. September 7th, 1938 is the closing date for advertising copy to appear in the special pipe line section. Closing date for the balance of the issue is September 12th. Write or phone our nearest office today.

ADVERTISING CLOSING DATE
for special pipe line section
SEPTEMBER 7th

THE OIL AND GAS JOURNAL

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NEW YORK CHICAGO CLEVELAND HOUSTON LOS ANGELES COLOGNE

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Fundamental Principles of Corrosion

I am interested in the study of corrosion of equipment used on leases and desire an explanation of the fundamental causes of the deterioration of metals when in ordinary use.—D. T. F.

A great deal of study has been devoted in an attempt to fully understand the factors contributing to the corrosion of metals and if you have access to a book by Dr. F. N. Speller, entitled "Corrosion, Causes and Prevention" and one by Dr. W. D. Bancroft, "The Electrolytic Theory of Corrosion" you can learn a great deal about these problems.

All metals have an inherent tendency to go into solution when in contact with water. The extent of this tendency varies for different metals, and a list of the more common metals, in accordance with the electromotive series of metals, is given to show their respective tendencies toward going into solution:

Sodium	Chromium	Lead
Calcium	Cadmium	Hydrogen
Magnesium	Iron	Copper
Aluminum	Nickel	Mercury
Zinc	Tin	Silver
	Gold	

Sodium at the top of the series, exhibits the greatest tendency toward solution or is the most "anodic"; the succeeding metals are progressively more resistant to solution, so that gold, at the bottom of the series, exhibits the highest resistance or is the most "cathodic." Furthermore, any metal will replace any other metal below it in the series. For example, if an iron nail is immersed in a solution of copper sulfate, a partial solution of the nail will occur and an equivalent amount of copper will be precipitated from the solution, according to the equation $Fe + CuSO_4 = FeSO_4 + Cu$. In the same way, iron will be dissolved by hydrochloric acid and evolve hydrogen gas, according to the equation: $Fe + 2HCl = FeCl_2 + H_2$.

Although a consideration of the electromotive series is fundamental in the interpretation of corrosion phenomena in practice, other considerations of a secondary nature may really be the controlling factors in the corrosion reaction. Thus, since pure water ionizes slightly to produce hydrogen ions, we should expect iron to be continuously soluble when placed in contact with distilled water. Interference from secondary factors ordinarily prevents this from occurring. Thus, when iron is placed in contact with water, the reaction begins according to the primary equation:

$$Fe\ (metal) + 2H^+\ (ionic) = Fe^{++}\ (ionic) + 2\ H\ (atomic). \quad (1)$$

However, as the reaction proceeds, the atomic hydrogen "plates out" and protects the surface of metal. For this reason, the corrosion reaction may be entirely stopped, unless factors that facilitate removal of the hydrogen are present. Removal or "depolarization" of the hydrogen may be effected in two ways, expressed by the following equations:

$$2\ H\ (atomic) = H_2\ (molecular). \quad (2a)$$

$$2\ H\ (atomic) + \tfrac{1}{2}\ O_2\ (dissolved) = H_2O\ (liquid\ water) \quad (2b)$$

Only solutions that possess pronounced acidity are capable of organizing and expelling atomic hydrogen as molecular hydrogen (equation 2a), in ferrous corrosion. Hence, dissolved oxygen must be present in the solution to bring about depolarization according to equation (2b), before the main corrosion reaction (equation 1) can proceed at any appreciable rate. In practice, the usual condition existing is that some oxygen is excluded from certain areas on the surface of the metal, while neighboring areas are in contact with dissolved oxygen, a localized or pitting attack occurs which is called "oxygen-concentration-cell corrosion"; the areas that are least accessible to dissolved oxygen are the points of attack (anodic areas), while the areas in contact with oxygen are protected from corrosion (cathodic areas).

The foregoing discussion of the mechanism of iron corrosion is quoted from the introduction to Bureau of Mines Report of Investigation No. 3131, entitled "The Use of Aluminum for Oil Lease Tanks" by Ludwig Schmidt, John M. Devine, and C. J. Wilhelm, and is roughly applicable to other metals. However, for metals that are relatively anodic, depolarization by dissolved oxygen may not be the controlling factor in the corrosion reaction, because the atomic hydrogen is expelled from the the solution in appreciable amounts as molecular hydrogen.

Another secondary factor that may retard or halt the main corrosion reaction (equation 1) presents itself in the character of the corrosion products. If the corrosion products are impervious to the corroding solution and are deposited in a continuous, unbroken film on the surface of the metal, a natural protection is afforded the metal. In practice, such natural protective coatings are of great importance, but little is known concerning the optimum conditions for their formations.

On the basis of the electromotive series, it is inferred that, if two different metals are placed in an aqueous solution, one will be protected from corrosion at the expense of the second, in accordance with their respective locations in the series; that is, the metal that is located relatively highest in the series will suffer abnormally high corrosion through its protection of the second metal. This rule will generally hold in practice if the two metals are in electrical contact with each other and present in the same solution. A somewhat similar case exists where a metal is in contact with two different solutions; such a condition will result in accelerated corrosion, and is called "salt-concentration-cell corrosion."

Application of Corrosion Theory to Aluminum

Investigators generally agree that aluminum owes its resistance to corrosion to the protective action of a superficial layer of oxide which is established in situ by autooxidation. Inasmuch as the metal itself is located relatively high in the electromotive series, as shown in the table, it is evident that any set of conditions whereby the oxide film is ruptured or rendered pervious to aqueous solutions, will result in rapid corrosion of the metal when in contact with such solutions.

U. R. Evans in "Corrosion of Metals" has made an extensive study of the spontaneous formation of oxide films on aluminum and other metals and reports that chloride ions, in general, are penetrative to, and nullify the effectiveness of metallic oxide films, by means that are not clearly understood. More specific to the present study, H. V. Chruchill and Stanley Gill have noted that solutions of chlorides attack and corrode aluminum.

Thus, a study of aluminum corrosion in aqueous solutions resolves itself, primarily, into a study of the effect of the dissolved constituents on the aluminum-oxide film. Following rupture or disintegration of the film, the corrosion probably proceeds according to the primary equation:

$$2Al\ (metal) + 6H^+\ (ionic) = 2Al^{+++}\ (ionic) + 6H\ (atomic).$$

Dissolved oxygen in the solution would facilitate the depolarization of the atomic hydrogen, but its presence may not be necessary for procedure of the primary reaction, because aluminum is a relatively anodic metal.

Types of Aluminum Corrosion Studied

The potential corrosive agents to which the aluminum tanks were subjected in service included natural gas, oil, and salt water, each of which contributed free hydrogen-sulfate gas in varying proportions. The field test proved that natural gas and oil were without corrosive effects on the tanks. The salt water, however, was capable of producing serious corrosion. Hydrogen sulfide, in dissolved or free state, did not have any direct action on the tanks, but indirectly it was a contributory factor to corrosion through the production of iron sulfide by interaction with the steel flow lines. Iron sulfide, so formed, was flushed into the tanks and functioned as an accelerator to salt-water corrosion.

All of the corrosion in the aluminum tanks was of a highly localized nature, resulting in a pitting attack. Nevertheless, it was possible to identify three distinct types of corrosion:

1. Low temperature salt-water corrosion, encountered in aluminum tank sheets in contact with natural brine, was primarily caused by the magnesium and calcium chloride in the brine. Iron sulfide, which was present in the tanks, greatly accelerated the corrosion. Oxygen, which may have been present in the brine in traces (through absorption from the atmosphere), was possibly also an accelerating agent. A practical step in the reduction of this type of corrosion is the elimination of iron sulfide and oxygen from the tanks.

2. High-temperature salt water corrosion, encountered in aluminum steam-heating coils in contact with natural brine, was caused primarily by the precipitation of bubbles of hydrogen-sulfide or carbon-dioxide gas on the surface of the metal, which resulted in superheating and corrosion of the metal. Theoretically, pretreating of the tank water to dispell dissolved gases would materially decrease this type of corrosion; such a recommendation, however, would be of little practical value.

3. Bimetallic corrosion, which was encountered where aluminum-steel contacts existed in the presence of natural brine, is explained by the relatively anodic character of aluminum as compared to steel. Aluminum-steel contacts should never be made in the presence of water, and wherever aluminum and steel are brought into proximity the metals always should be efficiently insulated from each other.

4. The different grades of commercial aluminum that are available vary in their resistance to the types of corrosion studied. This suggests that an exhaustive laboratory study wherein all grades and alloys of aluminum are considered, would yield information which would assist in the selection of materials for aluminum tankage.

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—Newest well at Zenith, Stafford County, was estimated good for 8,000 bbls. daily, based on 90-minute flow of 592 bbls., to rate as the field's biggest producer. Newest Arbuckle producer in Hittle pool, Cowley County, reported good for 125 bbls. an hour. New producing sector was opened in section 11-12-16w, Ellis County. Hall pool, Russell County, was extended one-half mile eastward. Pool openers were completed in section 34-14-13w, Russell County, and section 8-27-2e, Sedgwick County.

OKLAHOMA—Another producer was completed in the deep zone, Fox field, Carter County, flowing 1,072 bbls. of high-gravity oil through choke in 24 hours. The Oklahoma County wildcat near Britton failed to respond satisfactorily when swabbed and was being deepened a few feet. It made a few small head flows, with 1,000,000 feet of gas. Another wildcat southwest of Oklahoma City was to be tested late this week. It cored saturated Wilcox sand. A 10,000-foot test for the old Chickasha gas field, Grady County, was announced.

NEW MEXICO—The past week was one of the busiest seven-day periods in southeastern New Mexico for several weeks, 22 completions being recorded. These included five oil wells in the Vacuum field, pace setter for the state. Wildcats in Chaves and Otero counties were failures.

TEXAS—A test in the Cedar Point field, Galveston Bay, has opened Miocene production. There is a possibility of the K.M.A. 3,800-foot Strawn sand being extended into Wilbarger County. Another distillate field has been discovered in the Rio Grande Valley in southern Hidalgo County. Yoakum County is the center of activity in West Texas.

LOUISIANA—Discovery well on the Hester salt dome in St. James Parish continues to show an increase in production and is flowing 188 bbls. of 41.2 gravity. A location has been staked to test the oil possibilities on the northeast flank of the Logansport gas-distillate structure.

ARKANSAS—A north offset to the discovery well in the Village field of Columbia County is showing saturation.

MICHIGAN—An extensive drilling play is on in Overisel Township, Allegan County, where three good oil wells and two dry holes were completed during the week. There are 15 wells drilling to the Traverse pay.

ROCKY MOUNTAIN AREA—The deep test of Plymouth Oil Co. in the Denver basin will seek the Lower Cretaceous. Previous tests in eastern Colorado were on the high arches of the eastern rim, seeking the Pennsylvanian and Ordovician.

CALIFORNIA—Within the next 10 days one or two tests in the Guijarral Hills section are expected to give additional data on the potentialities. Large flowing wells are expected, if as believed, the apex of the structure is northwest of the discovery well.

NORTH DAKOTA—The first test in the Rocky Mountain region to pass 10,000 feet is drilling on the Nesson structure in Williams County at 10,160 feet.

Completions in All Fields

(Week Ending August 13, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	61	1	9	71	2,405	2,709
Ohio	10	8	9	27	591	717
Indiana	1	2	5	8	53	64
Kentucky	6	1	11	18	529	318
Illinois	26	0	11	37	813	65
Michigan	8	1	10	19	505	508
Kansas	19	0	10	29	1,019	1,580
Oklahoma	21	5	12	38	1,082	1,760
Texas:						
West Central Texas	46	0	13	59	1,947	1,760
West Texas	23	0	7	30	1,218	1,682
Texas Panhandle	7	3	1	11	374	448
East Texas	25	0	0	25	1,277	1,393
East Central Texas	2	1	4	7	222	433
East Texas Border	0	0	0	0	97	240
Gulf Coast Texas	26	1	2	29	804	937
Southwest Texas	25	2	4	31	1,237	2,035
Total Texas	154	7	31	192	7,176	8,928
North Louisiana	9	1	4	14	401	390
Gulf Coast Louisiana	8	1	3	12	289	285
Total Louisiana	17	2	7	26	690	675
Arkansas	0	0	0	0	144	83
Montana	0	0	1	1	55	128
Wyoming	3	0	0	3	103	68
Colorado	0	0	0	0	6	8
New Mexico	16	2	4	22	349	468
Utah	0	0	0	0	1	2
California	19	0	6	25	822	936
Total United States	361	29	126	516	16,343	19,017
Total previous week	329	29	101	459		
Difference	32	0	25	57		

Outstanding Fields--Highlights

(Week Ending August 13, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	62	108	30	8,599	680	13,750
Hastings	4	7	3	1,813	569	20,738
Saxet	2	8	1	282	611	32,696
East Texas	34	62	25	1,257	25,494	440,000
Ector County	15	79	7	8,940	1,194	45,300
Winkler County	6	11	0	0	1,678	40,450
OKLAHOMA						
St. Louis	6	25	5	1,808	669	19,750
Oklahoma City	3	8	0	0	1,088	116,475
KANSAS						
Barton County	4	16	8	3,096	343	11,605
Stafford County	2	14	2	579	157	4,530
Rice County	3	16	1	532	1,188	28,953
Russell County	4	15	2	500	1,116	24,709
NEW MEXICO						
Lea County	17	80	14	2,422	1,814	101,010
LA-ARK-TEX						
Rodessa, La-Ark-Tex	3	14	2	837	1,020	74,415
Cotton Valley (deep)	2	11	2	930	84	12,025
Lisbon, La.	5	13	3	4,419	254	10,250
Schuler, Ark.	3	13	0	0	78	22,110
MICHIGAN						
Buckeye	1	12	1	392	430	19,472
ILLINOIS						
Central Illinois	31	218	26	4,405	769	44,419
CALIFORNIA						
Wilmington	7	26	7	10,322	499	95,750
KENTUCKY						
Birk City	5	21	3	1,100	36	1,916

Illinois and Kentucky

By STAFF CORRESPONDENT

Extend Lake Centralia Pool One Half Mile to Northeast

MATTOON, Ill., Aug. 13.—The Lake Centralia pool, opened by the Texas Co., was extended a half mile northeast of production by a 1,000-bbl. well of Lopar and others No. 1 MacRoberts, SW cor. NW SE NE section 32-2n-2e, producing from Benoist sand.

This and the news that Pure Oil Co. had made 13 new locations, one in Wayne County, one in Richland County, and 11 in Clay City area in Clay County, were the features of the week's news from the various fields of the state.

The Cities Service Co., with head operating offices in Bartlesville, Okla., has opened a branch office in Mattoon, and Devonian Oil Co., of Tulsa, has likewise established a regional headquarters in this city.

The Texas Co. has completed its 4-inch pipe line from the Lake Centralia, or Texasco pool, to Sandoval, and it is expected that it will begin running oil through the line by Saturday of this week.

ILLINOIS FIELDS

HIGHLIGHTS OF THE WEEK: Lake Centralia pool in Marion County is extended one-half mile northeast by a 1,000-bbl. well. Pure Oil Co. makes 13 locations in Clay County.

Daily production in new pools, 44,419 bbls.; old pools, 10,904 bbls. Total, 55,323 bbls. per day.

Completed oil wells, 26. New operations, 29. Rigs and drilling wells, 249. New locations, 27.

COMPLETIONS

Recent Illinois completions included the following wells:

In Clinton County, W. C. McBride No. 2 Allison, NE section 12-1n-1w, Benoist sand 1,378 feet, total depth 1,386 feet, pumped 77 bbls. of oil and 40 bbls. of water; Shell Petroleum Corp. No. 8 Allison, SW NE SE section 12-1n-1w, Benoist sand 1,356 feet, total depth 1,375 feet, pumped 50 bbls. of oil and 12 bbls. of water in 18 hours; American Seismograph Co. No. 1 Hawkins, Lot 23, Block 3, Finney Heights, section 24-1n-1w, Bethel sand 1,376 feet, total depth 1,389 feet, dry and abandoned; J. Hausman and others No. 1 Nothaus, NE NE NE section 23-2n-2w, wildcat, Bethel 1,440 feet, total depth 1,528 feet, dry and abandoned; Adams Oil & Gas Co. No. 2 Copple, NW SW SE section 35-2n-1w, Cypress 1,200 feet, total depth 1,214 feef, 63 bbls. of oil daily; Shell Petroleum Corp. No. 4-A Criley, NW SE SE section 35-2n-1w, Benoist 1,341 feet, total depth 1,368 feet, pumped 103 bbls.

Marion County

W. B. Frost No. 1 Home Building & Loan, Lot 6, Block 23, Original Townsite, section 18-1n-1e, Centralia pool, Marion County, Benoist 1,367 feet, total depth 1,383 feet, pumped 75 bbls. daily; Taylor Drilling Co. and Adams Oil & Gas Co.'s well, Lot 7, Block 76, Original Townsite, section 18-1n-1e, Benoist 1,354 feet, total depth 1,376 feet, pumped 88 bbls. of oil and 10 bbls. of water; Texas Co. No. 1 Canull, C W half NE NE section 6-1n-2e, Benoist 1,687 feet, total depth 1,734 feet, flowed 405 bbls. of oil daily, estimated; Arch Carpenter Drilling Co. No. 1 I. C. R. R., C W half NW SE section 82-4n-1e, Benoist 1,425 feet, total depth 1,450 feet, pumped 35 bbls. of oil and 6 bbls. of water; Adams Oil & Gas Co. No. 1 Cox, SE NE SE section 29-4n-1e, Patoka, Benoist 1,416 feet, total depth 1,437 feet, 71 bbls. oil; Cole & Simmel No. 1 Kuester, C E half SW SW section 5-1n-1e, an old wildcat, deepened from 250 feet to 807 feet, dry and abandoned.

In Wabash County, Adams Carner Oil & Gas Co. No. 9 Holsen & Darney, NW SW NW section 18-1n-11w, Biehl sand 1,525 feet, total depth 1,550 feet, pumped 5 bbls. of oil.

Clay County

Wiser Oil Co. No. 1 Daly, C W half NW NE section 12-2n-7e, Clay County, McClosky 3,059 feet, total depth 3,085 feet, pumped 129 bbls. in 16 hours, estimated 125 bbls. daily; Pure Oil Co. No. 5 McKinney, C E half NE SW section 9-2n-8e, McClosky 2,972 feet, total depth 3,048 feet, 81 bbls.; same company's No. 6 McKinney, C E half SE SW section 9-2n-8e, McClosky 2,990 feet, total depth 3,041 feet, 85 bbls.; Carter Oil Co. No. 1 Neely, C N half NW SE section 13-3n-6e, McClosky 2,962 feet, total depth 2,993 feet, pumped 172 bbls. of oil and 87 bbls. of water; Gulf Oil Corp. No. 1 Pierce, C N half NE SW section 13-3n-6e, McClosky 2,960 feet, total depth 2,977 feet, 47 bbls. of oil and 65 bbls. of water daily; Pure Oil Co. No. 10 Wilkin, C E half SE SE section 29-3n-8e, McClosky 2,960 feet, total depth 3,025 feet, flowed 271 bbls.

In Richland County, Pure Oil Co. No. 1 Greeson, C N half SE NE section 12-2n-8e, total depth 3,100 feet, dry and abandoned; same company's No. 1 Matre, C S half NE NW section 7-2n-9e, McClosky 3,026 feet, total depth 3,120 feet, 657 bbls.; Texas Co. No. 4 Zirkle, NW SW SW section 23-4n-10e, McClosky 3,046 feet, total depth 3,074 feet, 250 bbls.; Pyramid Oil Co. No. 1 University of Chicago, NW cor. section 26-4n-10e, an old well deepened from 3,036 feet to 3,056 feet, McClosky topped at 3,030 feet, flowed 260 bbls.

Fayette County

Kingwood & Duncan No. 1 Yolton, NE SW NW section 7-7n-3e, Benoist 1,588 feet, total depth 1,597 feet, pumped 109 bbls. of oil and 50 bbls. of water; Finley & Grear No. 1 Torbeck, NW SW NW section 16-5n-2e, total depth 1,919 feet, dry and abandoned; Schroeder and others well in NE NE NE section 30-7n-3e, Cypress 1,549 feet, total depth 1,567 feet, 110 bbls.; Carter Oil Co. No. 1 Fortner, NE SE NE section 10-8n-3e, Bethel 1,586 feet, total depth 1,600 feet, 88 bbls.; W. C. McBride, Inc., No. 1 Stokes, SW SW NE section 14-8n-3e, Weiler 1,494 feet, total depth 1,532 feet, 350 bbls.; Carter Oil Co. No. 4 Dove, SW NW SE section 15-8n-3e, Bethel 1,475 feet, total depth 1,491 feet, pumped and flowed 235 bbls.; same company's No. 5 Logsdon, SE NE NE section 15-8n-3e, Bethel 1,486 feet, total depth 1,505 feet, flowed 265 bbls.; W. C. McBride, Inc., No. 1 Stokes B, SE SE SW section 19-8n-3e, total depth 1,757 feet, dry and abandoned; W. B. Johnson No. 1 Goetting, NW NE NW section 32-8n-3e, Weiler 1,502 feet, total depth 1,545 feet, 80 bbls.; Minerva Oil Co. No. 3 Tish, NE NW SE section 33-8n-3e, Bethel 1,572 feet, total depth 1,591 feet, flowed 425 bbls.

In Macoupin County, Ganey & Windsor No. 1 Drew, NW NW NE section 33-9n-6w, wildcat, total depth 617 feet, hole full of water, abandoned.

In Clark County, Stipes and others No. 2 Dougherty, NE NW NW section 10-11n-14w, total depth 425 feet, dry and abandoned; same operators' No. 1 Bayer, SE NE SW section 29-12n-13w, dry and abandoned at 525 feet.

In Shelby County, O. C. Borah No. 1 Patten, NE NE NW section 25-11n-2e, wildcat, total depth 1,886 feet, dry and abandoned.

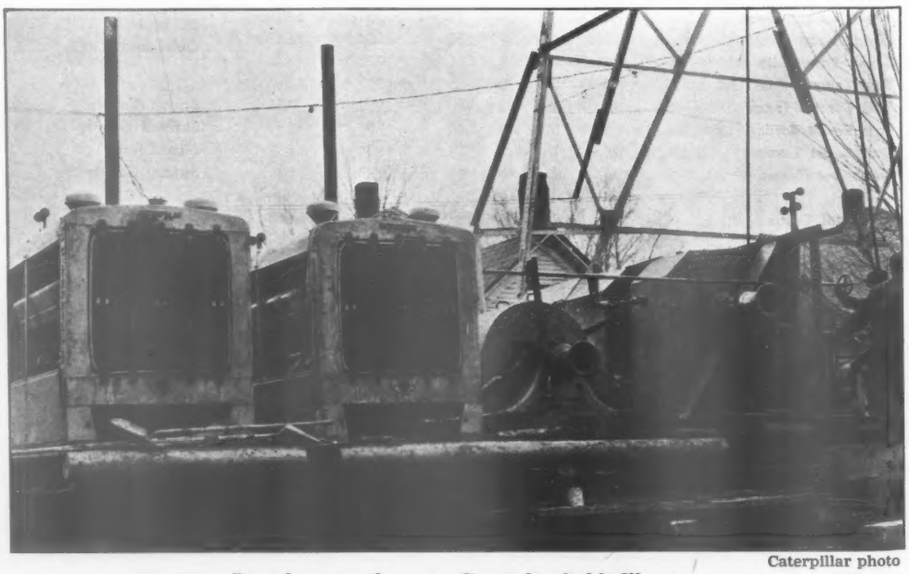
OHIO

LIMA, Ohio, Aug. 15.—Ohio operators had 21 completions for the week, eight gas wells, five oil wells and eight dry holes.

In Athens County, Carthage Township, C. W. Nuzum No. 1 Kate Niggemeyer, section 33, made 650,000 feet of gas from the Salt sand at 1,055 feet. In Canaan Township, Speary Oil & Gas Co. No. 1 Bank of Athens, section 12, was dry at 688 feet.

In Holmes County, Mechanic Township, Bell Brothers No. 1 O. W. Boyd, section 19, was dry in the Berea at 824 feet.

In Guernsey County, Washington Township, Jones &



Caterpillar photo

Diesel-powered rig in Centralia field, Illinois

Jewell No. 1 L. F. Brumbaugh, section 14, made 100,000 feet of gas and 5 bbls. of oil the first 24 hours after shot from the Berea at 1,207-11 feet.

In Knox County, Jackson Township, C. A. Davis No. 1 A. J. Jones, section 10, is a small gas well in the Berea at 902 feet.

In Licking County, Mary Ann Township, Armbruster & Stricker No. 1 C. A. Wright, Lot 21, first quarter, is a Berea gas well gauging 175,000 feet. In same township, St. Albans Drilling Co. No. 3 James Keaser, Lot 22, first quarter, made 150,000 feet of gas in the Berea at 750 feet. In Perry Township, George Vandergrift No. 1 G. C. Mauk, section 16, made 10 bbls. of oil the first 24 hours after shot from the Berea at 742-51 feet.

In Medina County, Chatham Township, Preston Oil Co. No. 6 L. A. Severcool, Lot 4, Tract 16, made 6 bbls. of oil the first 24 hours after shot from the Berea at 274-98 feet.

In Meigs County, Bedford Township, Joe Rubin No. 1 Don O'Brien, section 11, had a hole full of water in the Maxon sand at 1,010 feet. In Salisbury Township, Harry Smith No. 1 R. F. Hysell, section 26, is a gas well gauging 250,000 feet from the Maxon sand at 933 feet.

In Monroe County, Franklin Township, Gerber & Myers No. 1 Edward Ball, section 21, is a dry hole in the Berea at 1,845 feet. In Malaga Township, Barnesville Development Co. No. 1 L. Huff, section 34, is a small gas well in the Berea sand at 1,845-95 feet.

In Morgan County, Windsor Township, Kepple No. 1 Harley McDaniel, Lot 1139, is a dry hole in the Berea at 1,731 feet.

In Noble County, Olive Township, William Patton No. 1 Freemont Hutchins, section 14, found water in the Maxburg 800-foot sand at 1,027 feet and was abandoned.

In Washington County, Barlow Township, C. A. Peavey No. 1 W. M. Jones, section 7, found the Maxon sand dry at 1,288-1,328 feet. In Barlow Township, McTaggart No. 2 D. W. McFarland, section 21, found 140,000 feet of gas in the Stray sand at 992 feet.

Lima Field

The Trenton field accounts for two Ohio completions. In Putnam County, Blanchard Township, Houbler Brothers and Smith No. 1 Charles Heighley, section 21, had a show of oil in the Trenton at 1,365-77 feet. The shot gave no results and the hole was abandoned after testing.

In Seneca County, Liberty Township, West & McPharon No. 1 Milo E. Saul, section 36, is a small gas well in the Trenton at 1,447 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Aug. 15.—Operations in the Eastern Kentucky field dropped to a new low during the week. Most of the field operators reported no wells completed, little change or no drilling in their districts.

Only one completion is included in the report. Kentucky-West Virginia Gas Co. completed No. 5244 C. W. Preece on Coldwater Fork in Martin County at a total depth of 1,344 feet in slate. The well has a daily production of 25 bbls. of oil in the Maxon. The same firm is idle at No. 5243 on the same farm and is down 2,250 feet in No. 5245 Preece. It has a location for No. 576 Julia Ward and others on Wiley Branch of Levisa Fork in Johnson County. It is plugging hole at No. 571 Noah Jervis on Levisa Fork in Floyd County and is idle at No. 574 John and Benjamin Sellards nearby. It is down 152 feet in No. 575 Henry C. Slone on Caney Fork in Knott County.

Inland Gas Corp. is drilling at 450 feet in slate and shells in No. 202 Elizabeth Adams on the Right Fork of Troublesome Creek, also in Knott County. All other operations in the district are unchanged or unreported.

"The Welding Encyclopedia"

The ninth edition of "The Welding Encyclopedia," just off the press, is a practical reference book on metallic arc, carbon arc, oxy-acetylene, electric spot, butt, flash and resistance welding, thermal welding and metal spraying.

The new edition covers the developments in the welding industry since 1932 and particularly gives information on the use of coated electrodes which account for the increase in arc welding in recent years. Describing this method has necessitated the rewriting of all articles pertaining to arc welding. This new edition combines commercial and engineering information in a manner which will enable the reader to quickly find almost anything desired about welding processes.

"The Welding Encyclopedia" may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $5, express prepaid, and a copy will be forwarded promptly upon receipt of check or money order. Where payment or company purchase order is not included, the book will be shipped express c.o.d. to avoid delay.

3 Dry Holes and 2 Failures in Birk City's McClosky Horizon

HENDERSON, Ky., Aug. 15.—The first dry hole in McClosky lime in the Daviess County side of the Birk City field was drilled by Carter Oil Co. on the Hagan lease. The company will test upper sands. A showing of oil was found in the Jones sand. The well was drilled to a total depth of 1,975 feet, more than 100 feet below the usual McClosky pay depth.

An old McClosky lime well drilled about 10 years ago in the Utica district in Daviess County is being cleaned out and may be acidized in the McClosky horizon. The well was shot without effect a decade ago, but it is thought an acid treatment may develop oil production.

Only three new wells were reported in the Birk City field in the past week. Their combined initial production was 1,100 bbls. There were two dry holes. In Western Kentucky altogether there were 18 completions, of which 6 were oil wells, 1 a gas well, and the remaining 11 were dry holes.

Following is a report on completions and new operations in the past week:

Henderson County, Birk City district: Carter Oil Co. No. 4 O. L. Boswell west tract, after being acidized, swabbing 25 bbls. per hour; W. E. Hupp and others No. 2 O. L. Boswell east tract, dry hole, total depth 1,984 feet, no saturation; Cumberland Petroleum Co. and Snowden & McSweeney No. 3 Francis Dempewolf 37 acres, estimated 250 bbls., saturation 1,860-75 feet, total depth 1,886 feet; No. 4 moving in; Lincoln Petroleum Co. No. 1 Arthur Pirtle south 47 acres, location, moving in this week; Simon Lebow No. 1 James Priest 46 acres, moving in; Imperial Oil & Gas Co. and Thompson Drilling Co. No. 1 Mrs. O. M. Duncan, moving in.

Daviess County, Birk City district: Major Oil Co. No. 1 Prudential Insurance Co., 95-acre tract, location; Bailey, Bond, Hayes & Fitzpatrick No. 1 R. M. Hagon 100 acres, total depth 1,864 feet, saturation 1,852-64 feet, acidized with 1,000 gallons. Operators think casing is set too low and will gun-perforate pipe at saturation. Carter Oil Co. No. 1 R. M. Hagan 143 acres, dry hole, total depth 1,975 feet. No McClosky saturation; are going to test Jones sand before abandoning, where Schlumberger test showed oil. Speary and others No. 1 R. M. Hagan 52 acres, building derrick; Aetna Oil Service Corp. No. 1 G. M. Morrison, rigging up; Major Oil Co. No. 1 Horace Nelson, set casing at 1,850 feet, not cored; W. E. Hupp and others and Snowden & McSweeney No. 2 Mrs. L. Taylor Estate, 250 bbls., saturation 1,852-76 feet, total depth 1,881 feet; No. 3 set surface pipe. Cane Run School district: Ellis & Ashby No. 13 Myrtle Howard, 15 bbls. from Jett sand; No. 14 drilling at 500 feet.

Grayson County, Falls of Rough district: A. V. Smith and others No. 1 Bud Sharver, dry hole, total depth 498 feet.

Hancock County, Easton district: Joseph B. Mayers and others No. 14 Jess Stewart, 350,000 feet of gas from Jett sand.

Butler County, Mount Zion district: Porter Evans and others No. 1 R. H. Gardner, dry hole, total depth 171 feet; No. 1 E. V. Harper, dry hole, show of gas, total depth 200 feet; No. 3 E. C. Harper, 5 bbls., total depth 176 feet; No. 4, 5 bbls., total depth 178 ft.; No. 5, dry hole, total depth 180 feet; No. 6, spudding in; Trader and others No. 1 Hub Harper, dry hole, total depth 375 feet. Huntsville district: W. E. Hupp and others No. 1 Vernon Harrison, dry hole, total depth 195 feet. Silver City district: Porter Evans and others No. 1 Forrest Wester, moving in. Rochester district: A. C. Cornell and others No. 2 W. A. Tanner, dry hole, total depth 868 feet.

Daviess County, Utica district: W. H. Albaugh and others No. 1 Ed Bennett, cleaning out old well drilled several years ago, which had a good McClosky showing; expect to acidize.

Ohio County, Ralph district: Dr. G. M. Hardie No. 5 Mrs. Nannie Bean, drilling at 300 feet; Fred J. Young and others No. 3 M. Coleman, 5 bbls. from Jett sand at 565-83 feet; No. 4 moving in. Fordsville district: A. J. Stewart and others No. 20 Ed S. Dunn, rigging up. Mohawk Drilling Co. No. 1 Lanham Heirs 1-A, drilling at 135 feet. Friendship Church district: Petroleum Extraction Co. No. 3 E. M. Royal, dry hole, show of gas. Heflin district: Mike Callas and others No. 1 L. B. Shaver, dry hole, total depth 2,330 feet, black shale 1,990-2,210 feet.

Webster County, Sebree district: I. B. Browning and others No. 6 J. R. Ramsey, deep test, salt water in Corniferous, may plug back and acidize McClosky, which had a show of oil, total depth approximately 3,200 feet.

Operations in New York and Pennsylvania Gas Fields

COUDERSPORT, Pa., Aug. 13.—Two wells were completed in the New York-Pennsylvania deep sand gas fields during the past week, both of them dry holes. G. L. Cabot, Inc., completed a wildcat test on the Whitney-Duke farm in Bingham Township, Potter County, at 5,259 feet, 4 feet in the Oriskany, where salt water was encountered. This company also drilled the other dry hole, an extension test in the Woodhull field of Steuben County, which found the Oriskany dry at 4,421-44 feet and was plugged and abandoned at 4,445 feet.

Another Cabot test in the Woodhull area was reported nearing completion. This well, on the Gibson farm, was shut down for casing at 3,578 feet. The Tully limestone was reached at 2,770 feet in this hole and the top of the Onondaga at 3,570 feet.

All remaining New York operations, with one exception, are in Willing Township, Allegany County. Van Gelder and others are drilling at 4,575 feet on the J. O'Hara farm; Empire Producing Co., at 3,075 feet on the Floyd Wilson farm; Penn York, at 1,955 feet on the Cyrus Wilson farm, and Belmont Quadrangle Drilling Co. is rigging up to drill on the No. 2 Hilligas farm. Belmont is also spudding in on the A. H. Billins farm, Independence Township, this county.

The interesting wildcat of Wasson and others on the E. S. Collins farm, Howe Township, Forest County, was reported drilling at 5,120 feet, approximately 10 feet in the Onondaga. This test, delayed only by minor caving in the Marcellus shales since spudding in about two months ago, should reach the Oriskany in a comparatively short time.

Another interesting Pennsylvania wildcat that is attracting attention is that of McKenry and others on the Stellman farm in Rockland Township, Venango County. These operators are cleaning out at 4,762 feet, believed to be well in the Onondaga limestone.

Williamsport Oil & Gas Co. is in the Onondaga in its test on the Russell farm in Sharon Township, Potter County. It was reported drilling at 5,201 feet with the top of the Onondaga at 5,171 feet. In other operations in the county G. L. Cabot, Inc., is drilling at 4,866 feet on the West Bingham Grange farm. Bingham Township, after topping the Tully at 4,240 feet and the Onondaga at 4,861 feet and New York State Natural Gas Co. is drilling at 2,412 feet on the L. E. Hanes farm, Harrison Township.

New York State Natural Gas Co. also reached the top of the Onondaga in its test on the L. Dickerson farm in Gaines Township, Tioga County. This formation was reached at 5,374 feet and the well was reported drilling at 5,384 feet at the close of the week. G. L. Cabot, Inc., is drilling at 910 feet on the Flora Bell Joy farm, Brookfield Township, Tioga County.

The wildcat test of Updegraph on the O. E. Erickson farm in Elk Township, Warren County, was reported bailing water at 5,232 feet.

Eastern Field Report

By STAFF CORRESPONDENT

Deep Test in Fayette County Apparently Is Well Located

PITTSBURGH, Pa., Aug. 15.—Another deep test in Southwest Pennsylvania reached the lower Devonian and appears well located on structure. In Springhill Township, Fayette County, about 1.1 miles north of the West Virginia state line near Wymps Gap, L. J. Houze Convex Glass Co. topped the Onondaga lime at 6,618 feet and is fishing a baller lost in the hole.

This test is on Chestnut Ridge anticline over 9 miles southwest along the axis from the discovery well on Summit Hotel property, No. 1 Heyn. This discovery well reached the Onondaga at minus 4,259 feet subsea and the new test with a surface elevation of 2,202 feet places it at minus 4,416 feet subsea or only 159 feet lower.

On the last run from 6,631-40 feet, the formation hardened up as shown by the bit, and on running out with the baller, it caught at 2,700 feet, breaking the sand line. The last samples were not brought to surface but it is believed they should show chert or the beginning of the Huntersville chert zone. The Tully lime appears to be placed at 6,202-89 feet with the Hamilton at 6,339-69 feet.

The rotary test of Peoples Natural Gas Co. on the John S. Marshall farm on the Grapeville anticline in Westmoreland County, Penn Township, was tested with a clean hole to 7,669 feet. There was no showing of gas and the hole was cored to 7,777 feet and shut down. It will be shot this week between 7,642-68 feet with a 60-quart time shot and then tested.

In Ravenswood district, Jackson County, West Virginia, the Oriskany test of Joe Rubin on the W. J. Brown farm about one-quarter mile up the Ohio River from Ravenswood was drilled through the sand and proved a disappointment. The Oriskany sand was placed at 4,265-85 feet and the samples showed it as very full of lime and brownish. It was drilled to 4,290 feet and shut down with the gas having decreased to 49,000 feet a day. It will later be shot.

During the week in the lower Eastern fields, 19 operations were completed of which two were dry holes, nine gas wells, and eight producers with a daily initial of 197 bbls. a day, most of which was in Southeast Ohio.

SOUTHEAST OHIO

The best producer for the week was J. P. Gordon and others No. 4 Thomas S. Moran in the NE quarter section 13, Fallsbury Township, Licking County. It was completed at a depth of 3,059 feet, the Clinton sand, and produced 120 bbls. the first 20 hours after shot. In the southeast quarter of this section, Walker & Hodge completed a test on the Susan J. Martin farm in the Clinton sand which produced 39 bbls. the first day after shot. The total depth was 3,073 feet.

In Perry Township, Licking County, G. S. Lacknett and others completed a test on the G. C. Mauk farm in section 16 in the Berea sand at 751 feet, good for 8 bbls. a day after shot. In section 10, Licking Township, Ohio Fuel Supply Co. drilled on the P. R. Shartle farm through the Clinton sand to 2,745 feet and it was dry.

In Muskingum County, Preston Oil Co. completed a test on the George S. Morrison heirs farm in the NE quarter of section 7, Harrison Township, at a depth of 4,367 feet, the Medina sand. It will make a 9-bbl. pumper and was not shot.

In Perry County, Preston Oil Co. completed No. 1665 Sunday Creek Coal Co. in the NE quarter of section 36, Coal Township, in the Clinton sand at 3,675 feet, showing for 5 bbls. a day and not shot.

In Trumbull County, Norwood P. Johnston and others are getting ready to resume deepening on the G. M. Porter farm west of the Mecca crossroads, Mecca Township, which, cased to 3,868 feet, has been standing at 3,965 feet with a clean hole.

SOUTHWEST PENNSYLVANIA

Only one well was completed in Southwest Pennsylvania and it was a small producer. In Conoquenessing Township, Butler County, Reiber & McKnight completed a test on the Reiber farm in the Third sand at 1,702 feet, good for 4 bbls.

In Washington County, Penn Ohio Oil & Gas Co. is drilling at 2,655 feet on the W. E. Davis farm with the Gantz sand at 2,640 feet and a showing of oil and gas at 2,641 feet. It is in South Strabane Township. In Amwell Township, Harry Williams & Co. spudded on the Dean Swart farm.

In Morris Township, Washington County, Union Gasoline & Oil Corp. reached 800 feet in the No. 2 G. L. Craft with the Pittsburgh Coal at 689 feet. In Fallowfield Township, Naoma Oil & Gas Co. is drilling at 211 feet on the James M. Williams farm.

In Plum Township, Allegheny County, Hope Construction & Refining Co. is deepening No. 4 Adam Elicker and has reached 2,338 feet. In Beaver County, Freshwater & Reed are down 1,110 feet on the Walter S. Laughlin farm.

Greene County

In Center Township, Greene County, Charles Mong and others are shut down cementing the break above the Nineveh Thirty-foot sand in No. 3 Jesse L. Metz. Here Equitable Gas Co. is drilling at 2,800 feet deepening No. 1 D. M. Thorp and is at 2,773 feet in the G. M. Kuhn which is being deepened.

In Franklin Township, this company is down 2,969 feet deepening No. 1 W. L. Jacobs and in Greene Township at 2,225 feet in No. 1 W. E. Blaker. In Washingtonton Township, this company is drilling at 897 feet on the John Huffman farm.

In Aleppo Township, Burleigh Wright is drilling on the William McVay farm at 365 feet. Cochran and others have reached 2,175 feet in No. 4 John Strope.

In Morris Township, R. E. Hoskinson and others are drilling at 1,300 feet on the H. W. Ealy-C. C. Conklin farm with the Pittsburgh Coal at 909 feet. In Richhill Township, Smith McCracken is drilling past the tools at 3,085 feet on the Asa Hughes farm.

Deep Tests

On Chestnut Ridge in Wharton Township, Fayette County, Greensboro Gas Co. reached 8,150 feet on the J. R. Thompson farm and shut down for orders. The samples showed the salt beds below the Oriskany and to date it has been void of any gas or water. On this structure, but in North Union Township, Wasson & Co. are drilling at 5,549 feet on the J. H. Sorg farm.

In Beaver County, John T. Galey and others reached 4,520 feet on the Eliza Allen heirs in South Beaver Township and shut down for a new sand reel.

WEST VIRGINIA

Two producers were completed in West Virginia. In Lewis County, McCall Drilling Co. completed No. 2 N. J. Rinehart Heirs in Freemans Creek district at 1.888 feet, the Injun sand, and it made a gas well. After shot, however, it showed considerable oil and is now rated at 10 bbls. a day along with 280,000 feet of gas.

In Ritchie County, McBurney and others completed No. 8 M. B. Nutter in Clay district in the Maxton sand at 1,641 feet as a 2-bbl. pumper.

Gas Wells

In Cabell County, Mountaineer Gas Co. completed the test on the Burrill Nelson heirs in McComas district at 3,357 feet gauging 552,000 feet.

In Gilmer County, Pittsburgh & West Virginia Gas Co. completed No. 7668 W. H. Simmons in Glenville district at 1,743 feet, with 641,000 feet of gas at 1,431-43 feet.

In Lincoln County, A. F. Morris, trustee, deepened No. 1 D. W. Lovejoy, in Jefferson district, from 2,134 feet to 3,990 feet, gauging 318,816 feet 24 hours after shot. The Corniferous lime was topped at 3,990 feet.

In Logan County, Boone County Coal Co. completed No. K-11 on its property in Logan district at 3,409 feet, gauging 896,446 feet from the Big lime and Berea 15 hours after shot. In this district, this company has made a location for No. L-12 with an elevation of 1,573.35 feet.

In Roane County, Hope Natural Gas Co. completed No. 7810 C. E. Vandeventer in Smithfield district at 1,784 feet, gauging, before shot, 270,000 feet.

In Kanawha County, Valley Gas Co. completed No. 4 G. W. Harless in Elk district in the Weir sand at 1,944-2,050 feet, gauging 315,000 feet

In the new shallow field in Wetzel County, W. F. Burgess and George Wasmuth completed a test on the Lewis and Martha Singwald farm in Proctor district at 580 feet, the Cow Run sand, good for 500,000 feet. Daniel Henthorn completed a test on the Clarence Phillips farm in that formation at 570 feet showing for 150,000 feet.

In Wood County, Lowther & Shuman drilled on the Minerva Hendershot farm in Union district below the bottom of the Berea 2,269 feet to 2,286 feet in the slate and shot it with 145 quarts from 2,269-86 feet. It had a showing of about 1 bbl. of oil but was abandoned.

Oriskany Gas Field

In Kanawha County, several good wells were completed. In Poca district, South Penn Oil Co. completed No. 1 Beane-Newhouse line well at 4,779 feet with Oriskany at 4,764 feet, first gas 4,766 feet and a final gauge of almost 15,000,000 feet.

In this district, about 10,800 feet south 35 degrees west of Sissonville, Columbian Carbon Co. completed the test on the Johnson-Gibson line well at 4,878 feet, the Oriskany. After shot, for a short time, it gauged over 23,000,000 feet a day and it was later rated at about 10,000,000 feet. There is no close completion on the west side of this.

In Poca district, Spartan Gas Co. completed a test on the R. B. and Fred Baldwin farm at 4,941 feet with the Oriskany topped at 4,926 feet and a final gauge of 8,828,000 feet.

There were two new locations in Poca district. Hayes Oil & Gas Co. will drill on the H. C. Painter farm, elevation 801.1 feet. United Carbon Co. has a location on the J. H. Prillerman farm, elevation 1,076.5 feet.

In spite of the large number of completions in the area covering Elk, Poca and Union districts, there seems to be no cessation in activity on this structure which by now has ceased to surprise eastern operators and which is undoubtedly the greatest gas reserve in the East. At present 30 wells are drilling, with rigs and locations for additional work.

Outside Deep Tests

In Jackson County, United Carbon Co. topped the Corniferous lime on the Elizabeth Ward Perkins farm in Washington district at 5,102 feet. The surface elevation is 945 feet which places that formation at 4,157 feet subsea which is high enough almost to assure production. The test was cased to 5,123 feet and is drilling at 5,145 feet and should be in the Oriskany within a week. This company's test on the I. C. Miller farm in Poca district is drilling at 3,610 feet.

In Pleasants County, the test of Columbian Carbon Co. on the Giles Hammat farm in Grant district is in

(Continued on Page 91)

California Field Report

By
L. P. STOCKMAN

Guijarral Hills Section Tests May Give Additional Data

LOS ANGELES, Calif., Aug. 15.—One and possibly two new wells should be completed in the Guijarral Hills section of the East Coalinga field within 10 days and consequently some additional data will be available regarding the potentiality of this area which Petroleum Securities proved productive on June 30. The discovery well was No. 2 Gatchell in section 18-20-16, completed flowing approximately 9,000 bbls. per day from 6,893 feet. It flowed for a short time at the rate of 20,000 bbls. per day through the tubing and casing simultaneously but was never given an open flow test for a full 24 hours. The apex of this structure is believed to be northwest of the discovery and if this is so completion of several large flowing wells may be expected within 30 days. Petroleum Securities Co. No. 88 Grimes, section 12-20-15, northwest of the discovery, is running 335 feet higher structurally than the discovery. This difference is based on markers cored above the present bottom at 6,415 feet but with about 200 feet of hole to make before reaching completion depth this might change. Universal Consolidated No. 1 Leavit-Hintze, also in section 12-20-15, at 6,155 feet is running about 300 feet higher than the discovery, while Superior Oil Co. No. 1 Hight in section 8-20-16, due north of the discovery, appears to be running about 750 feet lower structurally. No. 1 Hight at 6,898 feet is already deeper than the completion depth of the discovery well. There are nine wells in this immediate area headed to the pay, Standard Oil Co. No. 82-13, section 13-20-15, and Tide Water Associated Oil Co. No. 66 Guardian being the last two wells to begin making hole. Approximately 7 miles north of Petroleum Securities Co. No. 2 Gatchell, the discovery well in the East Coalinga area, Tide Water Associated Oil Co. has staked a location to be drilled on the Fleishacker lease in section 1-19-15.

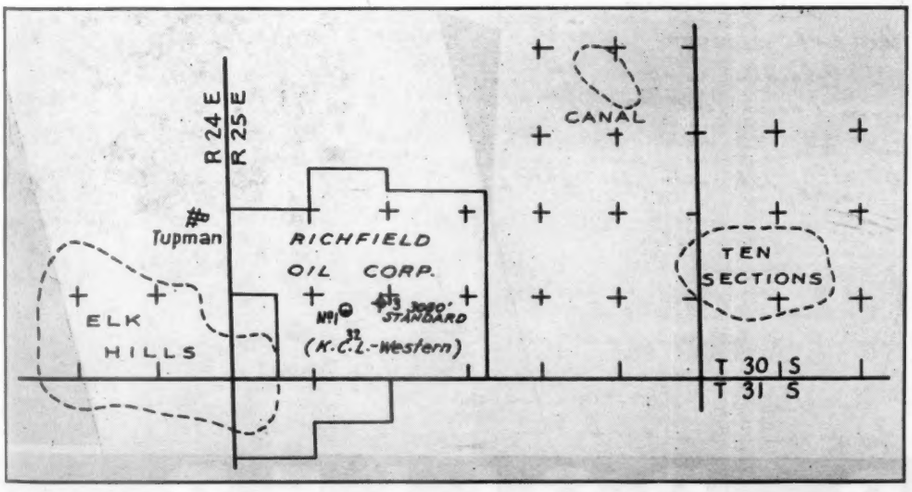
Wilmington

Completions in the Wilmington field averaged better than one a day during the week as seven new wells and one recompletion were put on production. Richfield Oil Corp. finished two wells and one recompletion good for an aggregate initial daily production of 4,012 bbls. The company's No. 1 Pacific Dock was completed flowing 2,045 bbls. of 24.6 gravity through a 40/64-inch bean from the Terminal zone at 4,383 feet after the hole had been acidized and finished with a 5¾-inch liner. No. 7 Pacific Dock was recompleted flowing 1,265 bbls. of 24.7 gravity through a 40/64-inch bean per day from 4,127 feet after the hole had been plugged back from 4,235 feet because of bottom water. No. 8 Pacific Dock was finished flowing 702 bbls. of 25.8 gravity through a 29/64-inch bean from 3,620 feet. Universal Consolidated Oil Co. completed the largest well in the Wilmington field during the week when No. 1 Newport was brought in flowing 4,960 bbls. of 26.8 gravity from the Terminal zone with bottom of the hole at 4,100 feet. This is the first of six wells to be drilled on this lease.

Union Pacific Railroad Co. completed two wells and should have No. 87 Offset tanking oil within a few days. The company's No. 85 bottomed at 3,997 feet and finished with a combination 6⅝-inch and an 8⅝-inch liner was brought in flowing 460 bbls. of 26.9 gravity but is still building up and may reach a substantially higher flow. It was finished with 369 feet of 6⅝-inch liner in the bottom of the hole and included 152 feet of 60 mesh with perforations at 3,809-25 feet, 3,840-88 feet and at 3,908-97 feet. The 8⅝-inch which was hung at 3,636 feet and cemented through perforations at 2,926 feet and 3,273 feet included 556 feet of 60 mesh perforations at 2,933-3,062 feet, 3,077-184 feet, 3,275-451 feet, 3,466-545 feet and at 3,555-620 feet. Union Pacific No. 3 Pacific Dock was completed flowing 455 bbls. of 26.8 gravity from the Terminal zone with bottom of the hole at 4,110 feet. The lower 321 feet of hole was plugged up before completion, however, and the well is producing from 3,789 feet. The hole was finished with 482 feet of 6⅝-inch liner including 354 feet of 60 mesh landed at 3,788 feet. Perforations were at 3,410-603 feet, 3,618-715 feet and at 3,725-789 feet and the string was cemented through perforations at 3,408 feet. Burns Oil Co. No. 1 Harbor was good for only 195 bbls. of 15.6 gravity from the Ranger zone with bottom of the hole at 3,671 feet and pumping equipment necessary to secure production. O'Kane & Brain No. 2-O Long Beach Harbor Department, on property leased from the Harbor Department, was completed flowing 240 bbls. of 17.3 gravity from the Ranger zone at 2,910 feet. It was brought in flowing through a 16/64-inch bean and showed a tubing pressure of 250 pounds and a casing pressure of 350 pounds. General Petroleum Corp. completed No. 43 Harbor Community in the Ranger zone at 2,620 feet and should be good for around 500 bbls. under a natural flow. A check of development in Wilmington indicates that about six wells should be listed for completion before the close of another week. During the week 10 locations were staked, indicating operators will continue with drilling operations for some time. Tideland development has not yet started although preliminary preparations are under way to ask for bids.

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	404,467	60,035
Diesel and gas oil	.....	.....	.....	.....	178,662	329,658
Gasoline	127,811	18,259	.....	.....	2,054,329	2,645,227
Kerosene	.....	.....	.....	.....	199,453	256,032
Asphalt	.....	.....	71,838	10,263	418,700	278,026
Lubricants	.....	.....	3,240	463	16,905	22,472
Foreign exports—						
Crude oil	896,271	128,039	249,603	35,658	18,079,815	10,273,093
Fuel oil	159,162	22,737	239,219	34,174	6,649,455	9,956,455
Diesel and gas oil	223,207	31,887	163,607	23,372	5,363,082	6,338,848
Gasoline	543,530	77,647	349,184	49,883	8,255,088	7,945,009
Kerosene	54,624	7,803	19,765	2,823	1,131,181	2,010,751
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	6,174	882	.....	.....	378,856	372,775
Other unfinished oil	.....	.....	.....	.....	.....	847,290
Coastwise-domestic—						
Crude oil	368,507	52,644	355,954	50,851	7,198,568	2,445,293
Fuel oil	329,984	47,141	265,793	37,971	10,076,481	12,896,437
Diesel and gas oil	63,695	9,099	6,270	896	1,854,965	1,922,147
Gasoline	483,229	69,033	505,000	72,143	13,811,618	12,190,436
Kerosene	12,441	1,777	.....	.....	460,405	412,008



Richfield Oil Corp. is drilling a wildcat a few miles east of the Elk Hills field and west of Ten Section field. Standard Oil Co. drilled a shallow test on this acreage a number of years ago but failed to carry it deep enough for a conclusive test

Rosecrans

Three new wells were completed in the deep O'Dea zone in the Rosecrans field this week and another potential producer should be ready for a production test within a few days. The well nearing completion is Superior Oil Co. No. 9 Maxwell which was carried to its present depth, 7,658 feet, in the fast time of 23 days. This well is in the pay and unless something develops at the last minute should be on production within 30 days. The crew will be moved to No. 10 Maxwell, the rig for which is in course of construction. Superior has drilled three wells in this field, using the same derrick and equipment. Union Oil Co. accounted for two of the three new wells in this field during the week and is making preparations to start another. The company's new wells were Nos. 21 and 22 on the Rosecrans lease, the former being completed flowing 370 bbls. of 33.1 gravity through a 48/64-inch bean and the latter having been finished flowing 1,495 bbls. of 33.5 gravity through a 63/64-inch bean. No. 21 Rosecrans was finished with 580 feet of 5¾-inch liner including 314 feet of 120 mesh landed on bottom, 7,845 feet, and No. 22 Rosecrans was finished with a 5¾-inch liner carrying 340 feet of perforations landed on bottom, 7,915 feet. No. 21 shows a tubing pressure of 295 pounds and a casing pressure of 350 pounds and No. 22 shows tub-

(Continued on Page 78)

Performance Plus...in the

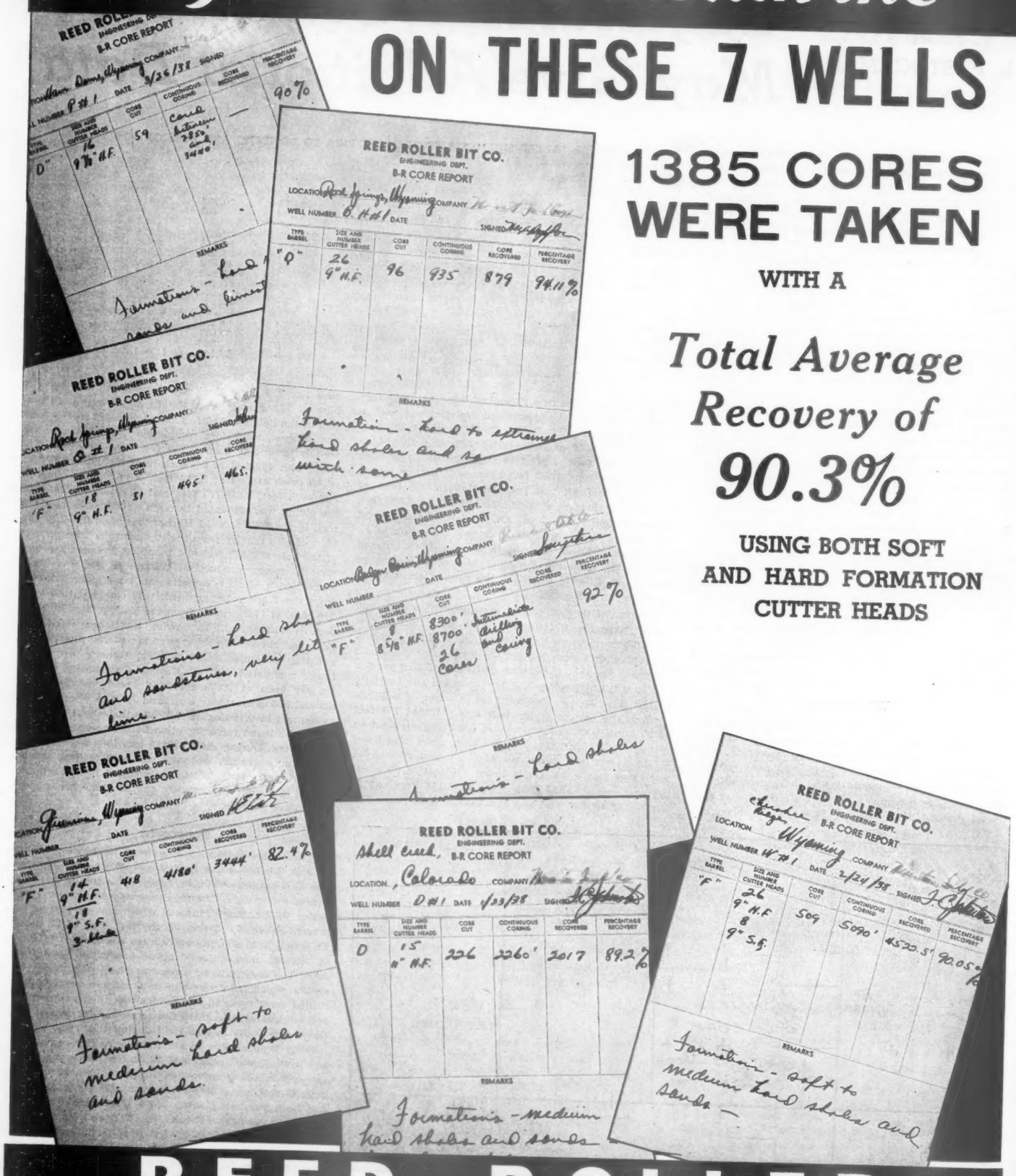
ON THESE 7 WELLS

1385 CORES WERE TAKEN

WITH A

Total Average Recovery of 90.3%

USING BOTH SOFT AND HARD FORMATION CUTTER HEADS



REED ROLLER

Rocky Mountain Area

with the

REED 'B-R' DRILLING BIT with WIRE LINE RETRACTABLE CORE BARREL

The formations drilled on these seven wells varied from the fairly soft shales and sands in Southwestern Wyoming to the hard and abrasive limestones and sandstones in Eastern Wyoming.

The results obtained gave these operators:

HIGHER PERCENTAGE RECOVERY OF CORE CUT
LOWER CORE COST PER FOOT
REDUCED RIG OPERATING COSTS

BIT COMPANY

ing and casing pressures of 400 pounds and 1,050 pounds respectively. Barnsdall No. 9 Rosecrans, finished early in the week, was brought in flowing 1,620 bbls. of 32.3 gravity through a 28/64-inch bean under a tubing pressure of 640 pounds and a casing pressure of 850 pounds. It was carried to 7,857 feet and plugged back to 7,707 feet and the hole finished with 395 feet of 5¾-inch liner including 339 feet of 100-mesh screen landed at 7,703 feet and 7,656 feet of 2½-inch tubing.

Rio Bravo

Two new wells are scheduled for completion in the Rio Bravo field of Kern County next week, both expected to show substantial production. These are George F. Getty, Inc., No. 2 Ramsey and General Petroleum Corp. No. 1 Wagner. At the close of the week the former was bottomed at 11,407 feet with the water string cemented at 11,392 feet. Top of the Rio Bravo zone was logged at 11,394 feet. General Petroleum No. 1 Wagner in section 35-28-25 is coring for the pay as the 7-inch water string was cemented late last week at 11,292 feet. No. 1 Wagner has been drilling longer than any well in the field being held up for several months with mechanical trouble. The fish was finally recovered and the well is headed for early completion. Union Oil Co. failed to recover either of the two fishes lost in No. 2-34 Kern County Land and finally whipstocked the hole away from the top of the lost drill pipe and began redrilling. This well was down 11,204 feet and cemented on top of the pay when mechanical trouble developed while the crew was coming out of the hole following a water shutoff test. The company is redrilling at 8,720 feet and making good progress. Union's next completion should be No. 4-34 Kern County Land as the bit was at 10,990 feet late in the week. Superior Oil Co., which should have No. 3 Geissinger tanking oil within a few days, has recompleted No. 1 Anderson flowing 920 bbls. of 37.8 gravity cutting 5 per cent from 11,608 feet. This well was completed several weeks ago but went to water and the company found it necessary to kill it and undertake remedial work. Before being returned to production the company ran in 278 feet of 5-inch blank liner and after cementing at 11,608 feet went back into the hole and perforated at 11,460-11,525 feet. It was recompleted flowing through a 19/64-inch bean and showed a tubing pressure of 1,715 pounds and a casing pressure of 1,800 pounds.

Torrance—Harbor City

Drilling operations in the Torrance field have not yet begun to show any decline and it may be possible additional drilling operations in the Harbor City section will offset any early decline in the Lomita section now undergoing deep zone development. During the week nine wells were put on production, the group including three drilled from the grass roots and six redrilled and deepened from the upper zone. Wilton Oil Co. has completed No. 5 Lomita flowing 641 bbls. of 27.1 gravity from 4,994 feet with a 7-inch water string landed at 4,883 feet. It was brought in flowing through a 37/64-inch bean and showed a tubing pressure of 250 pounds and a casing pressure of 380 pounds. Texas Co. No. 12 Wilson proved rather small upon completion as it was good for only 179 bbls. of 26.9 gravity from 4,920 feet. Peters Royalty Corp. No. 2 Lomita, a new well, has been completed flowing 375 bbls. of 26.8 gravity from 5,002 feet through an 18/64-inch bean. MacDonald & Burns have completed another well in the deep zone as No. 9 Lomita proved good for 132 bbls. of 26.8 gravity from 4,886 feet.

Lomita Drilling Co. No. 1 Hogan has been completed flowing 244 bbls. of 26.9 gravity from the lower zone at 4,985 feet to augment the production secured last week by completion of No. 2 Lomita. Woolner Oil Co. No. 4 Torrance was the smallest well finished in the lower zone this week as it was good for only 50 bbls. of 26.5 gravity cutting 8 per cent from 4,986 feet. This former upper zone producer was finished under a natural flow with a 16/64-inch bean. C. T. McCowan No. 1 Lindis, one of the most easterly wells, has been completed flowing 220 bbls. of 26.8 gravity from 5,165 feet. This former upper zone producer was finished with a solid string of 7-inch landed on bottom and gun perforated. Kiesau & Ford No. 1 Rhoades bottomed at 4,997 feet and finished with 1,500 feet of 5¾-inch, including 54 feet of perforated landed on bottom and 4,943 feet of 2½-inch tubing. Charles W. Camp No. 13 Lomita, drilled to 5,009 feet and plugged back to 4,965 feet because of bottom water, was completed pumping 165 bbls. of 26.3 gravity cutting 5 per cent. Production of this field despite the aggressive development program has not shown any great change during the past few weeks indicating the decline in production is just about breaking even with the new production. The aggregate initial daily production of new wells this week was 2,236 bbls. from nine wells.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	404,467	60,035
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	127,811	18,259	.....	.....	2,044,830	2,619,449
Kerosene	.....	.....	.....	.....	199,453	256,032
Foreign exports—						
Crude oil	622,855	88,979	172,806	24,687	14,616,170	8,496,751
Fuel oil	159,162	22,737	112,176	16,025	5,309,494	8,693,844
Diesel and gas oil	130,733	18,676	54,405	7,772	3,664,672	4,489,101
Gasoline	422,064	60,295	.....	.....	4,631,889	4,946,753
Kerosene	45,624	7,803	3,748	535	659,606	1,426,555
Lubricants	.....	.....	.....	.....	48,370	.....
Other unfinished oil	.....	.....	.....	.....	.....	847,290
Coastwise-domestic—						
Crude oil	368,507	52,644	355,954	50,851	7,198,568	2,445,293
Fuel oil	258,736	36,962	202,381	28,912	6,386,567	8,987,640
Diesel and gas oil	45,199	6,457	.....	.....	992,139	1,297,291
Gasoline	285,601	40,800	361,086	51,584	9,321,921	9,322,400
Kerosene	2,187	312	.....	.....	149,312	249,333

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	.....	.....	71,838	10,263	418,700	278,026
Lubricants	.....	.....	3,240	463	16,905	22,472
Foreign exports—						
Crude oil	273,416	39,059	76,797	10,971	3,463,645	1,776,342
Fuel oil	.....	.....	127,043	18,149	1,339,961	1,262,611
Diesel and gas oil	92,474	13,211	109,202	15,600	1,698,410	1,849,747
Gasoline	121,466	17,352	349,184	49,883	3,623,199	2,998,256
Kerosene	.....	.....	16,017	2,288	471,575	584,196
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	6,174	882	.....	.....	330,486	372,775
Coastwise-domestic—						
Fuel oil	71,248	10,178	63,412	9,059	3,689,914	3,908,797
Diesel and gas oil	18,496	2,642	6,270	896	862,826	624,856
Gasoline	197,628	28,233	143,914	20,559	4,489,697	2,868,036
Kerosene	10,254	1,465	.....	.....	311,093	162,675

Ten Section

Shell Oil Co., which has been running four strings of tools in the Ten Section field for several months, this week completed No. 61-29-A Kern County Land in section 29-30-26 flowing 2,962 bbls. of 34.4 gravity and 2,850,000 feet of gas from the productive Stevens zone at 8,230 feet. This producer, in the northeastern part of the field and one location southeast of No. 58-20-B Kern County Land, a producing well, was finished with a 7-inch water string landed at 7,945 feet and finished the hole in the regular manner with a conventional liner. Top of the pay was logged at 7,962 feet. Shell's next completion in the Ten Section field should be No. 32-2-B Kern County Land in section 32-30-26 as the bit is nearing 8,000 feet and it will be followed into production by No. 67-20-B and No. 72-31-B, both of which are on property leased from Kern County Land Co. A rig has been erected for No. 67-30-A and location staked for No. 47-20-B. The Ten Section field discovered by Shell Oil Co., which up to the present controls all of the productive acreage, has been found to be a field of primary importance and is being developed along conservative lines. The field is capable of producing in excess of 50,000 bbls. per day but despite the consistent development from a drilling standpoint is being produced at a daily rate of approximately only 7,500 bbls. per day.

Kern County

Honolulu Oil Corp. completed two wells in the Round Mountain field of Kern County: No. 47 finished pumping 305 bbls. of 15.7 gravity from 2,020 feet and No. 48 completed pumping 295 bbls. of 15.4 gravity cutting 3 per cent from 2,011 feet. Both wells are in section 20-28-29 and No. 49 should be completed in the same section in 10 days. No. 47, which picked up the top of the Vedder at 2,006 feet, was finished with an 8⅝-inch water string landed at 2,004 feet and 36 feet of 6⅝-inch liner including 20 feet of perforated. No. 48, originally given a production test a few weeks ago, was finished with 37 feet of 7-inch liner including 17 feet of perforated after a squeeze job to exclude water. In the Mount Poso field, Ring Oil Co. is putting the finishing touches on No. 7 Bowles in section 29-26-28 following conclusion of drilling at 1,740 feet. This well topped the productive Vedder zone at 1,709 feet and has been finished with 64 feet of 7-inch liner including 43 feet of perforated. Pumping equipment is being rigged up.

In the Fruitvale field of Kern County, Western Gulf Oil Co. has recompleted No. 4 Sawyer-Reed flowing 96 bbls. of 16.8 gravity through a 28/64-inch bean from 3,837 feet. Originally completed higher in the hole, it was finished with 178 feet of 4¾-inch liner including 129 feet of perforated landed at 3,835 feet and 3,662 feet of 2½-inch tubing. Western Gulf has staked location for another well on Kern County Land property in section 14-29-27 and rig material for this well, No. 38-B, Kern County Land will be on ground in a few days. Pacific Oil & Gas Co. has started a third well on the Guisti lease in section 14-29-27 and should reach the pay within 10 days. In the Canal field of Kern County Ohio Oil Co. and Shell Oil Co. have each started a well on their respective leases on which each finished an excellent well two weeks ago. Shell's last well in this field established a potential of 3,293 bbls. per day along with 3,075,000 feet of gas. Up to the present the productive acreage is controlled exclusively by Shell and Ohio. The former pioneered the area but Ohio finished the discovery well as Shell's first hole was abandoned as a duster.

San Joaquin Basin

Continental Oil Co. has been making fast footage in its third well in the Wasco field, and barring some last minute difficulties, should have it ready for a production test in three or four weeks as the bit has passed the 11,400-foot level. No. 8-1-B Kern County Land of Standard, one of two wells the company is drilling in the Wasco field, is at 11,370 feet. Standard No. 1 Mushrush in section 7-27-24 is rotating at 9,900 feet. Richfield Oil Corp. is reaming No. 2 Belridge in the North Belridge field in section 22-27-20 at 8,111 feet and should have this well ready for a test within 15 days. Texas Co. has stuck drill pipe in No. 4 Martin at 8,273 feet and is circulating oil to loosen. In the Kern River field, Heim & Smith have completed No. 5-A in section 34-28-28 pumping 15 bbls. of 14.3 gravity daily from 675 feet. National Oil Co. completed an excellent well in the Midway-Sunset field when No. 18 in section 34-32-23 was finished pumping 230 bbls. of 16.1 gravity from 2,042 feet after the hole had been carried to 2,050 feet and plugged back. Considering the quantity of pipe used and the condition of the oil zone at this point No. 18 is much better than the average.

In the Jasmin area Dilmar Oil Corp. appears to have developed production on the Quinn property in section 15-25-27 although the well's potential will not be determined for 15 days. On a short test, Dilmar No. 1 Quinn pumped at the rate of 75 bbls. daily from 2,882 feet. Shell Oil Co. is abandoning No. 83-35 Kern County Land, a wildcat in the McFarland district of Kern County, as a duster at 10,061 feet in the basement. Shell's geological department is fairly well sold on the area, however, and the company may undertake additional exploration work. The company has run two seismograph surveys across the area and has purchased about 2,000 acres in fee. A few miles away in section 17-26-25, Tide Water Associated Oil Co. is drilling a wildcat which has passed the 8,750-foot level. In section 9-26-26, C. C. White has abandoned No. 1 Armstrong as a duster at 2,380 feet but is making preparations to drill a second well a few hundred feet away. In the Lost Hills field, Randan Petroleum Corp. has completed a well on the Theta property in section 3-26-20 but its potential will not be determined for 10 days. The company is building tanks for a conclusive test. This well is bottomed at 1,625 feet and was finished with 109

(Continued on Page 114)

Southwest Texas District

By
F. L. SINGLETON

Another Distillate Field in the Rio Grande Valley Area

CORPUS CHRISTI, Tex., Aug. 15.—The discovery of a distillate field in the Rio Grande Valley district, and the opening of a mile northeast extension to the newly opened Fitzsimmons field, Duval County, featured developments in the Southwest Texas district the past week.

R. E. Harding No. 1 Lynn, Block 202, Kelly-Phar subdivision, southern Hidalgo County, provided the Rio Grande Valley district with another distillate field when it flowed an estimated 100 bbls. of fluid of which 25 per cent was 61.5-gravity distillate and the balance wash water and drilling mud. Late in the week the well was still cleaning out, flowing through a quarter-inch choke, having an equalized casing and tubing pressure of 2,000 pounds. This well has been in process of completion for two weeks, having tested salt water in two production tests at 7,074-82 feet, and at 7,103-15 feet. Final completion was made through perforated casing at 5,970-75 feet. The new field is between Pharr and McAllen. The same operator has let contract for a 7,500-foot test to be drilled near the city limits of McAllen, about 2 miles west of the discovery.

Fitzsimmons Extension

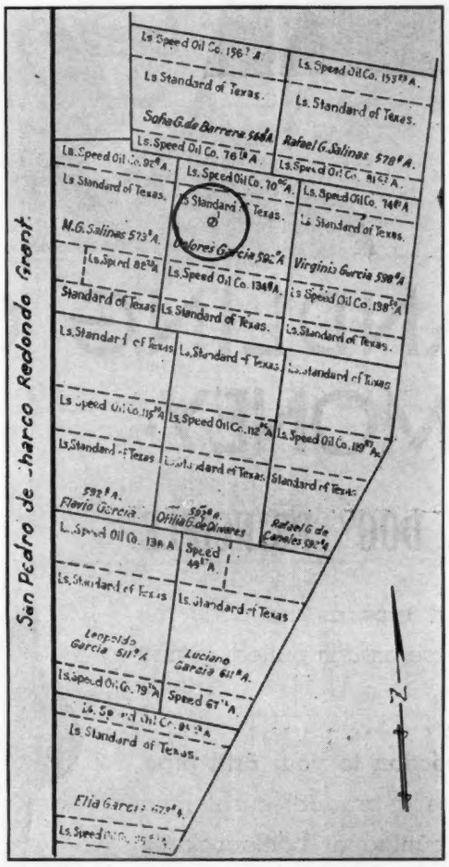
An increase in drilling activity was expected to follow completion of H. J. Porter No. 1 Clara Driscoll, which marked an important mile northeast extension to the Fitzsimmons field, Duval County. While the well was drilled tight and details of the completion are subject to correction, it is reported the Pettus sand was cored at 4,223-34 feet, and the well flowed 8 bbls. per hour through a 9/64-inch choke with tubing pressure 500 pounds and casing pressure 800 pounds. Since protection acreage is held by various companies, several locations are expected to be made during the week.

In the field proper, Houston Oil Co. and Sun Oil Co. were expected to complete two wells. Houston Oil Co. No. 1 Fitzsimmons, a northeast offset to the discovery, recovered 1,200 feet of oil on a 15-minute drill stem test at 4,314-29 feet, total depth, and 5½-inch casing was cemented at 4,329 feet. Sun Oil Co. No. 1 Bruggerman, Survey 288, topped the Pettus sand showing oil at 4,262-74 feet, and is being completed at total depth of 4,279 feet. H. J. Porter No. 2-A Fitzsimmons, a twin well to the discovery, established production in Government Wells sand when it flowed 55 bbls. per day through a quarter-inch choke with tubing pressure 1,200 pounds and casing pressure 1,320 pounds.

Tesoro Field

Along this same trend and located in the Tesoro field, Duval County, Rowan & Hope No. 1 Cuellar, 990 feet north of the discovery well, loomed as the second oil producer when it tested 500 feet of pipe line oil and 55 pounds of working pressure on a 15-minute drill stem test at 5,074-81 feet. Casing was expected to be cemented for completion. The discovery well, drilled by Rowan & Hope for Arkansas Fuel Oil Co. was completed in the Pettus sand through perforated casing at 5,109-17 feet and continues to show approximately 10 per cent salt water. By finding the sand higher to the north, this field, discovered the latter part of June, is expected to receive several new locations.

This particular trend, which extends southwesterly through eastern Duval County, is now one of Southwest Texas "hot spots" and some interesting wildcats will be drilled before the end of the year. Frank Gravis No. 1 Megerle, northeast of Benavides in section 245, was abandoned at a total depth of 6,044 feet, after a 20-minute drill stem test at 5,154-58 feet, tested no pressure and 30 feet of gas-cut mud. This well is reported to have cored sand carrying a gas odor in the Pettus sand which indicates the presence of structure, and the area will no doubt receive additional development in the near future. On the Sejita prospect, Standard Oil Co. of Texas No. 1 Dolores Garcia is coring below 6,582 feet. A protection string of 7-inch casing was cemented last week at 6,317 feet. Geological markers released by the company follow: Top of the Vicksburg 4,521 feet, Jackson 4,989 feet, Hockleyensis 5,210 feet, and the Pettus sand at 6,184 feet. Several sands having an oil and gas odor was reported in last week's review, and another showing was cored at 6,572-82 feet. On geological marker, the well is checking several hundred feet high. In the same county, along the shallow Laredo-Pettus trend, producers were added to the new Casa Blanca field, which has promise of becoming an important shallow producing field. Magnolia Petroleum Co. No. 5 Duval County Ranch Co., flowed 94 bbls. of oil plus 2 per cent salt water from a total depth of 1,197 feet. J. R. B. Moore No. 2 Martin pumped 120 bbls. daily from a total depth of 1,206 feet, while the same operator's No. 3 Martin, Survey 230, pumped 102 bbls. from sand bottomed at 1,163 feet. Fred Shields and others No. 2 Martin, 660 feet west of No. 1 A. H. Kramer Survey, is preparing to complete after a drill stem test at 1,147-60 feet tested 200 feet of oil.


San Pedro de Charco Redondo Grant
Ls Speed Oil Co. 156⁷ A.
Ls Speed Oil Co. 153⁸⁹ A.
Ls Standard of Texas.
Ls. Standard of Texas.
Sofia G. de Barrera 568 A
Rafael G. Salinas 578⁹ A.
Ls. Speed Oil Co. 76¹⁸ A.
Ls. Speed Oil Co. 92⁸ A.
Ls. Speed Oil Co. 70⁸⁰ A.
Ls. Speed Oil Co. 140⁸ A
Ls Standard of Texas.
Ls Standard of Texas.
M.G. Salinas 573⁸ A.
Dolores Garcia 582⁷ A
Virginia Garcia 598⁸ A
Ls. Speed Oil Co. 134⁹ A.
Ls Speed Oil Co. 138⁸⁵ A.
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592⁸ A.
Flavia Garcia
Ofilia G. de Linares
Rafael G. de Canales 590⁸ A
L. Speed Oil Co. 136 A
Sped 49⁸ A
Ls. Standard of Texas
Ls. Standard of Texas
Leopoldo Garcia 511⁹ A
Luciano Garcia 611⁸ A.
Ls. Speed Oil Co. 79⁸ A
Speed 67¹¹ A
Ls. Standard of Texas.
Elia Garcia
N

Plat of the Sejita prospect, Duval County, on which Standard Oil Co. of Texas is drilling No. 1 Dolores Garcia, one of the most attractive wildcats in Southwest Texas which is coring below 6,589 feet, having cored another sand section showing oil and gas at 6,572-82 feet

Sweden Field

Another important development in Duval County was the opening of a shallower sand in the Sweden field, by Hiawatha Oil & Gas Co. No. 5 Miller. This well, which found the Pettus sand (the discovery horizon) dry at 5,984 feet, was plugged back and completed as a good producer through perforated casing at 4,895-4,915 feet. It was shut in for storage soon after completion and no accurate gauge was available during the week. The new sand corresponds to one of the sands in the Benavides field, about 5 miles north. The well is about 4,700 feet west of production in section 23, Ball Ranch subdivision.

Shell Petroleum Corp. No. 1 Von Blucher, about 6 miles south of the East Premont field and 2 miles northeast of the town of LaGloria, Jim Wells County, continues to be the center of interest along this section of the Jackson trend. Since making its bid for a possible pool opener last week on a drill stem test at 6,055-68 feet, the hole has been cored and additional showings have been logged, some of which have been drill stem tested, but the results were withheld by the company. This well is an exceptionally interesting test, being on the same trend as the South Alice field, which during the past few months has become one of the most active wildcat areas in Southwest Texas.

In the Bandera gas field, Jim Wells County, opened last week by completion of Magnolia Petroleum Co. No. 1 Valdez, the company is moving in material for a second test, No. 1 R. V. De Garcia, approximately 1,320 feet due east of the discovery, in the La Anima Sola Survey. No important developments were reported from three other interesting wildcats drilling in the county. H. H. Howell No. 1 Mosser, 2 miles southwest of the South Alice field, continues to core deeper below 6,000 feet and since no promising showings have been cored, the test is expected to be abandoned within a few days. Same operator's No. 1 Hawkins, 2 miles northeast of San Diego, is drilling below 5,800 feet, with no showings reported. Pratt & Browning No. 1 Still, southwest of production at South Alice, is drilling below 3,700 feet and should be coring for the pay within a few days.

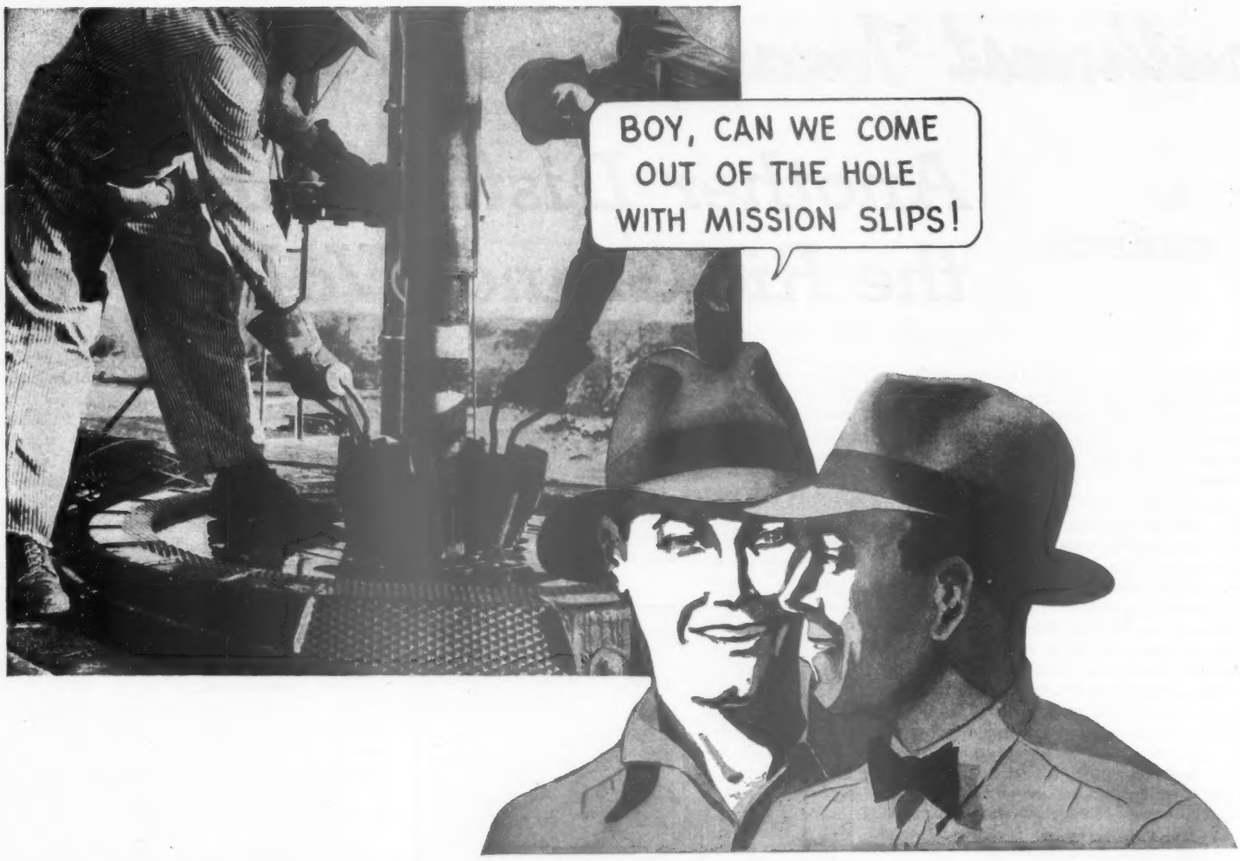
Wildcat Fails

Wildcatting in Nueces County was given another setback by abandonment of Seaboard Oil Co. No. 1 C. F. Lockett at 7,510 feet. The well is 5 miles southwest of Corpus Christi in the William J. Robertson Farm Tracts. In the Luby field, two producers were completed. Seaboard Oil Co. No. 10 Shaffer flowed 130 bbls. daily from perforated casing at 5,059-62½ feet. The well was tested through an 8-inch choke. Stanolind Oil & Gas Co. No. 10 Spessard, was completed in the shallow sand at 4,333-42 feet, for an initial production of 111 bbls. daily through an 8-inch choke.

In the Woodsboro area, Refugio County, I. J. Allen completed No. 2 Rooke as a distillate producer, opening a field. This well has been in process of completion for several weeks as production tests were made in numerous sand sections that showed promise of oil production. Final completion was made in the Frio section at 5,360-70½ feet, and the well had an initial flow of 25 bbls. of 54-gravity distillate through a quarter-inch choke. Tubing pressure was 2,350 pounds and casing pressure 2,200 pounds. The rig has been moved south to No. 1 Rooke, the operator's first test, recently abandoned at 4,568 feet. It is planned to deepen the hole to the discovery horizon.

Across the line in San Patricio County and 2 miles northeast of the Taft field, Humble Oil & Refining Co.

(Continued on Page 99)



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Kansas Developments

By
DAL DALRYMPLE

Biggest Producer at Zenith; New Arbuckle Well at Hittle

The Zenith pool of eastern Stafford County provided the sensation of the week in Kansas field operations, with a Misener sand producer estimated good for 8,000 bbls. of oil daily. Other highlights of the week included a good producer in the revived Hittle pool of Cowley County, opening of a new pool in Ellis County, indicated extension of the Hall pool in Russell County, and revival of a shallow area in Elk County.

E. H. Moore, Inc., No. 2 Johnson, SW cor. section 13-24-11w, was the big Zenith producer. It offsets the townsite on the east. It flowed 592 bbls. of oil through casing in the first 90 minutes, and on a later test flowed 426 bbls. in one hour. Accompanying gas was estimated at 10,000,000 feet daily. Total depth was 3,814 feet in Misener sand, the Zenith producing horizon. The well is in the east line of production in the field and is offset on the north and south by producers and on the west by a drilling well on Zenith townsite. Tubing was run preparatory to completion test.

On this showing it rates as the largest producer in the field. This record previously was held by Pure Oil Co. No. 2 Krey, NW NW SE section 14-24-11w, northwest of the townsite. It was completed for potential of 5,285 bbls. of oil from Misener sand.

Trees Oil Co. No. 4 Lewis, NW NE NE section 28-31-4e, Hittle pool, Cowley County, gave promise of becoming the biggest producer in that old sector that recently was revived with discovery of Arbuckle dolomite production. Originally a producer at 2,434 feet, it was deepened to 3,339 feet, 2 feet in Arbuckle zone, and oil rose 1,500 feet in the hole in 10 minutes and was reported good for 125 bbls. of oil an hour.

A new Arbuckle producing area was opened in Ellis County at C. B. Davis and others No. 1 Oswald, SW NW NE section 11-12-16w, some 15 miles northeast of Hays. Oil rose 1,500 feet in the hole in five hours at total depth of 3,350 feet in Arbuckle lime. Gravity of the oil was 38.5 degrees. Casing was set on top of the lime and a production test was due. Location is 1¼ miles north of nearest Arbuckle production and one-half mile north of the Blue Hill pool, producing from Lansing lime.

Hunt & Rathman No. 1 Cory, SE cor. section 18-30-9, in the old Grenola district of western Elk County, was estimated good for 100 bbls. of oil daily after acidizing Kansas City lime at 1,973 feet, total depth. Pumping equipment was being installed. It is the second Kansas City lime well in the field and the third producer, the other well finding oil in Mississippi lime.

Mid-Continent Petroleum Corp. No. 1 Rogg, NW NW NE section 32-14-13w, one-half mile east extension of the Hall pool, Russell County, was preparing to test. Kansas City lime was topped at 2,867 feet, and a saturated core was recovered at 2,902-05 feet, total depth.

Wildcat Developments

The South Letsch pool in Russell County was opened at Coralena Oil Co. No. 1 Hefferman, NE SE SW section 34-14-13w, a completion of the past week. Lansing-Kansas City lime was topped at 2,876 feet. Water intruded at 3,026 feet, total depth, the hole was plugged back to 2,926 feet and it was acidized. It pumped 162 bbls. of oil the first four hours, 134 bbls. the next two hours, and made poteptial of 804 bbls. of 42-gravity oil.

National Refining Co. No. 1 Trustee, SE SE NE section 8-27-2e, was another pool opener listed as a completion the past week. It is east of Wichita and north of the Eastborough pool. Viola lime was found at 3,258 feet, total depth 3,262 feet. It was shot at 3,253-61 feet, acidized and pumped 103 bbls. of 34-gravity oil the first four hours, 70 bbls. the next four hours and made potential of 420 bbls.

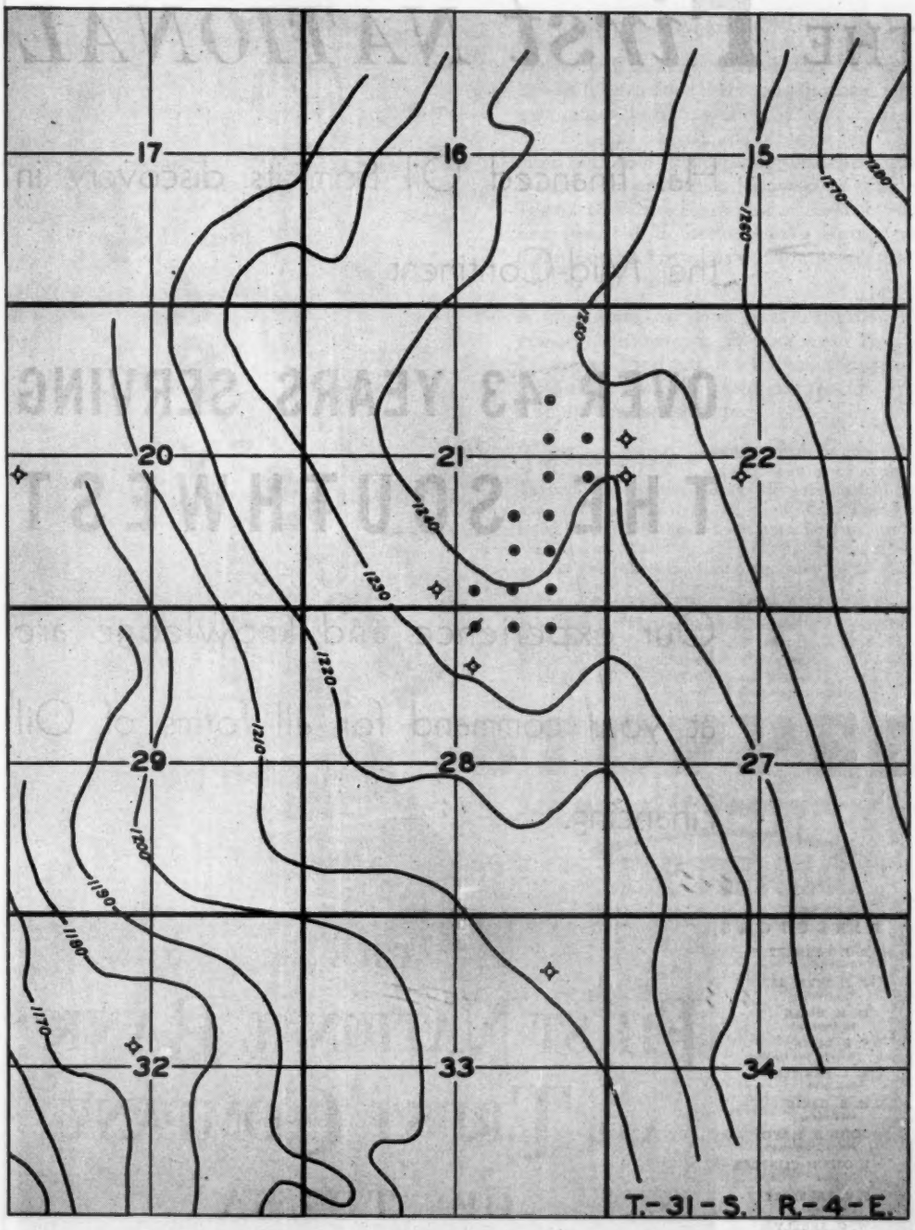
Duwe & Farris and Atlantic Refining Co. No. 1 Remmert, SW SW NW section 3-18-9w, wildcat in Rice County, found Arbuckle lime at 3,289 feet, total depth 3,341 feet and was dry and abandoned.

Gardner & Murfin and others No. 1 Krug, SW SW SE section 16-16-13w, wildcat north of Ainsworth in Barton County, found a small amount of oil in Arbuckle lime topped at 3,410 feet, but the hole filled with water at 3,415 feet and it was abandoned.

Carter Oil Co. No. 1 Gottschalk, NW NW SE section 36-15-18w, Ellis County wildcat, had several slight showings of oil from 2,910 feet, but water filled the hole at 3,477 feet, total depth, and it was abandoned.

Virgil Hicks No. 1 Heymon, NW SW NW section 33-23-5e, Butler County wildcat, topped Arbuckle lime at 2,666 feet, drill-stem test disclosed water and it was abandoned at 2,700 feet, total depth.

Power Oil Co. and Olson Oil Co. No. 1 Hammond, C



Surface map, Hittle structure, Cowley County, Kansas. Compiled from map by M. W. Baden, Winfield geologist, additional field work and diamond core drill data. Datum: Winfield limestone. Arbuckle limestone map of same area appears with Cowley County article in this issue

SW section 34-6-19w, wildcat in Rooks County, entered Arbuckle lime at 3,559 feet and was dry and abandoned at 3,725 feet, total depth. Elwell & Trees Oil Co. No. 1 Bair, SE SE NW section 34-10-19w, was an abandoned location.

National Refining Co. No. 1 Wentz, SE NE NW section 7-27-6, another Butler County wildcat, was dry and abandoned at 3,211½ feet. Arbuckle lime was found at 3,199 feet.

Ramsey Petroleum Co. and John Mabee No. 1 Ryan, C NE SE section 27-8s-32w, was location for a wildcat in Thomas County, northwestern part of the state. A. J. Scherzer No. 1 Krey, SE SE SW section 19-23-10w, new Reno County wildcat, was moving in material. Tide Water Associated Oil Co. No. 1 Noel, NE NE SW section 28-23-5e, Butler County wildcat, was a rotary rig.

Barton County

Eight new producing oil wells were completed in Barton County the last week. Helmerich & Payne No. 6 Stettinger, SW SW NE section 1-16-14w, Trapp district, found Arbuckle lime at 3,322 feet, total depth 3,339 feet, was acidized, pumped 433 bbls. of oil the first four hours, 450 bbls. the next four hours and made potential of 2,600 bbls.

Shell Petroleum Corp. No. 3 Ehrlich B, NE NE SW section 1-16-14w, was treated with 6,000 gallons of acid, pumped 424 bbls. of oil the first four hours, 406 bbls. the next four hours and was rated potentially at 2,424 bbls. It entered Arbuckle lime at 3,335 feet and was bottomed at 3,361 feet.

Same company's No. 4 Hoffman A, C N half N half SW section 7-16-13w, topped Arbuckle lime at 3,334 feet, was bottomed at 3,349 feet, acidized, swabbed 320 bbls. of oil in five and one half hours and made poteutial of 2,043 bbls.

Shell Petroleum Corp. No. 2 Ehrlich B, SE SE SW section 1-16-14w, was treated with 7,000 gallons of acid and pumped 341 bbls. of oil the first 4 hours, 333 bbls. the next four hours and made potential of 1,996 bbls. It found Arbuckle lime at 3,321 feet, total depth 3,348 feet.

Indian Territory Illuminating Oil Co. No. 9 Bryant, C N half N half NW section 25-20-11w, South Silica field, was rated potentially at 2,429 bbls. of oil daily, after pumping 425 bbls. of oil the first four hours and 405 bbls. the next four hours. Arbuckle lime was penetrated at 3,248 feet, total depth 3,262½ feet.

Gulf Oil Corp. No. 1 Kasselman, SE SE SW section 23-20-11w, had Arbuckle lime at 3,276 feet, was bottomed at 3,280 feet, pumped 551 bbls. of oil in 10 hours, was acidized, and made potential of 1,743 bbls.

Stanolind Oil & Gas Co. No. 13 Panning, SE NE NE section 2-20-11w, Silica district, pumped 273 bbls. of oil the first four hours after acidizing, 231 bbls. the next four hours and made potential of 1,385 bbls. of oil. Top of Arbuckle lime was 3,273 feet, total depth 3,284 feet.

Indian Territory Illuminating Oil Co. No. 5 Schrepel A, NW NW NE section 26-20-11w, South Silica, found Arbuckle lime at 3,262 feet, total depth 3,284 feet, was acidized, pumped 329 bbls. of oil the first four hours, 313 bbls. the next four hours and made potential of 1,878 bbls.

New work in Barton County: Shell Petroleum Corp. No. 3 Hoffman C, SE NE SE section 1-16-14w, Trapp field, location; Shell Petroleum Corp. No. 6 Hoffman A, NW SE SW section 7-16-13w, South Trapp, rotary rig; same company's No. 7 Hoffman A, SW NE SW section 7-16-13w, building a rotary rig; Phillips Petroleum Co. No. 3 Kroutwurst, NW NW SW section 11-17-11w, Kraft pool, rigging up rotary; Indian Territory Illuminating Oil Co. No. 10 Bryant A, C S half N half NW section 25-20-11w, set 13-inch casing at 186 feet, waiting; Western Kansas Oil & Refining Co. No. 2 Linsner, SW NW SE section 3-17-13w, rig; Duwe & Farris and Atlantic Refining Co. No. 1 Sporn, SW SW SE section 26-20-11w rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ending August 13, and for the preceding week, was as follows:

	Barrels	
	Aug. 13	Aug. 6
Oxford City	1,250	1,275
Burrton	9,400	9,425
Ritz-Canton	4,750	4,625
Graber	2,575	3,650
Hollow-Nikkel	3,025	2,975
Lerado	950	1,050
Voshell	2,000	1,975
Wellington	3,500	4,575
Ellsworth County:		
Lorraine	1,775	2,075
Other pools	1,165	975
Rice-Barton counties:		
Bloomer	2,450	1,825
Chase	4,425	3,350
Geneseo	3,100	3,650
Raymond	700	675
Silica	11,300	7,950
South Silica	1,975	1,250
Keesling	775	900
Wherry	5,175	1,950
Miscellaneous Barton	7,180	5,245
Miscellaneous Rice	3,480	4,810
Russell County:		
Fairport	1,380	2,045
Gorham	1,610	2,045
Russell	1,230	1,085
Sullivan	5,445	5,750
Trapp	7,550	5,785
Miscellaneous Russell	7,495	6,690
Sedgwick County:		
Valley Center	1,015	1,070
Miscellaneous	3,070	2,915
Ellis County:		
Bemis	7,175	4,075
Miscellaneous	3,065	3,045
Kingman County	580	550
Stafford County	4,530	5,420
Greenwood County	9,400	9,250
Butler County	21,975	21,475
Other fields	18,730	16,320
Total Kansas	165,200	151,725

Stafford County

Sinclair Prairie Oil Co. No. 3 Krey, SE SW NE section 14-24-11w, Zenith pool, Stafford County, found Misener sand at 3,785 feet, had Viola lime at 3,805-10 feet, total depth, and flowed 446 bbls. of oil in seven hours. It was shot with 10 quarts at 3,800-10 feet, flowed 226 bbls. of oil the first four hours, 229 bbls. the next four hours and made potential of 1,356 bbls.

Sinclair Prairie Oil Co. No. 2 Bunselmeyer, NE SE SE section 36-21-13w, found Arbuckle lime at 3,729 feet, had spotted saturation, but was dry and abandoned at 3,767 feet, total depth.

Atlantic Refining Co. and Phillips Petroleum Co. No. 2 Lyons, C E half NE NE section 28-24-13w, pumped 133 bbls. of oil the first four hours of test, 93 bbls. the next four hours and made potential of 557 bbls. Arbuckle lime was topped at 4,112 feet, total depth 4,116 feet.

The following new work in Stafford County was reported: Magnolia Petroleum Co. No. 1 D. F. Gates, NE NE SW section 34-21-13w, Gates pool, building rotary rig; same company's No. 2 Mattie Gates, SE NE NE section 34-21-13w, set 12-inch casing at 261 feet, waiting; E. H. Moore, Inc., No. 3 Johnson, NW SE SW

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section 13-24-11w, Zenith pool, rigging up rotary; Pure Oil Co. No. 8 Krey, SE SW SE section 14-24-11w, building rotary rig; Skelly Oil Co. and others No. 1 Kipp D, NE NE SE section 27-25-14w, Kipp pool, building rotary rig; Atlantic Refining Co. No. 7 Gates, NE SE SE section 27-21-13w, rig; J. E. Crosbie, Inc., No. 1 Johnson, SW NW SW section 13-24-11w, location; Pure Oil Co. No. 7 Krey, NW SE SE section 14-24-11w, cellar; Stanolind Oil & Gas Co. No. 1 Ferris A, SE cor. section 15-24-11w, cellar; same operators' No. 4 Volker, NE cor. section 23-24-11w, rig; same operators' No. 5 Volker, NW NE NE section 23-24-11w, cellar; their No. 6 Volker, NE NW NE section 23-24-11w, cellar; Charles Newbold No. 1 Walker, NE NE SW section 24-24-12w, rig.

Russell County

Darby Petroleum Corp. No. 9 Michaelis, NE SW SE section 36-15-14w, Trapp field, Russell County, found Arbuckle lime at 3,300-08½ feet, total depth, was acidized, pumped 383 bbls. of oil the first four hours, 369 bbls. the next four hours and made potential of 2,157 bbls.

Central Petroleum Corp. No. 2 Rouback B, NE NW SE section 15-14-15w, Gorham district, pumped 117 bbls. of oil the first four hours, 114 bbls. the next four hours and made potential of 687 bbls. It had Gorham sand at 3,205-09 feet.

First reports of new activity in Russell County: Stanolind Oil & Gas Co. No. 1 Krug A, NE cor. section 27-14-14w, Gurney pool, location; Continental Oil Co. No. 1 Billings, NW NW SW section 32-14-14w, East Big Creek pool, location; Coralena Oil Co. No. 3 George Sellens, SW SE SW section 20-15-13w, an old well in the Trapp field, rigging up to deepen; Stanolind Oil & Gas Co. No. 4 Boonson, NE SW SE section 20-11-15w, location; Skelly Oil Co. No. 2 Colliver, NW NE SE section 28-14-13w, moving in standard tools; Derby Oil Co. No. 13 Solback, SW SW NW section 32-14-14w, location; Skelly Oil Co. No. 9 Neidens, NW SE NE section 32-15-13w, rig.

Ellis County

L. H. Wentz and Phillips Petroleum Co. No. 1 Stackhouse, C N half N half SW section 23-12-18w, Shutts district, Ellis County, entered Arbuckle lime at 3,677 feet, found pay at 3,687-90 feet, total depth, and was acidized. It pumped 170 bbls. of oil the first four hours, 167 bbls. the next four hours and made potential of 1,003 bbls. of oil, cutting 1 per cent water.

New work in Ellis County: Dickey Oil Co. No. 1 Henderson, SW SW NE section 7-11-17w, South Burnett pool, moving in material; Shell Petroleum Corp. No. 8 Rumsey, SE SW NW section 23-11-17w, Bemis field, drilling at 880 feet; same operator's No. 9 Rumsey, NW NE NW section 23-11-17w, rotary rig; Wolf Creek Oil Co. No. 1 Bemis C, SE SW SW section 33-11-17w, Shutts district, rigging up rotary; Darby Petroleum Corp. No. 1 Jorgenson, SW NW SW section 7-11-17w, rig; Kerlyn Oil Co. No. 6 Rumsey, NW SE SW section 23-11-17w, rigging up rotary; Atlantic Refining Co. No. 1 Ubert, NW NW NE section 12-13-18w, rig.

Rice County

Another large producer was completed in the Habiger sector of Rice County at Mission Corp. No. 6 Habiger, SW NE NW section 5-18-10w, It found Lansing lime at 2,931 feet, had pay at 3,001 feet, total depth 3,017 feet, and was acidized. It flowed 532 bbls. of oil the first four hours of potential test, 466 bbls. the next four hours and made potential of 2,799 bbls. of oil, with 3,800,000 feet of gas.

C. B. Davis No. 1 Studer, NW NE SE section 5-20-10w, Silica field, topped Arbuckle lime at 3,405 feet and was dry and abandoned at 3,430 feet, total depth.

Texas Co. No. 5 West, SE NW NW section 21-20-10w, an old well, was deepened from 3,341 feet to granite at 3,958-60 feet, total depth, and recompleted for a water disposal well.

Cities Service Oil Co. No. 4 Guldner, SW cor. section 9-18-9w, Guldner pool, an old well, was dry and abandoned after plugging back from 3,244 feet to 3,169 feet and shooting. Originally, it was completed for potential of 268 bbls. of oil.

Sinclair Prairie Oil Co. No. 3 Sharp, SW NW NE section 7-20-9w, Chase field, an old well, was plugged back from 3,277 feet to 3,100 feet, shot, acidized and made potential of 285 bbls. of oil, recompleted.

Operations in Rice County reported for the first time: Continental Oil Co. and others No. 2 Williams, SE NE NW section 13-18-8w, Geneseo field, location; same operator's No. 2 Pickerill A, NW NE NE section 24-18-8w, location; Stapleton and others No. 1 Laton, SW SW NW section 29-19-9w, location; Shell Petroleum Corp. No. 5 Zajic, NW SW NE section 13-18-8w, rig; Skelly Oil Co. No. 4 Volkland B, NE SW SW NW section 5-18-10w, rig; Sinclair Prairie Oil Co. No. 1 Radenberg, SE SE NW section 8-18-10w, rig; Shell Petroleum Corp. and others No. 1 Saint, SW SE SE section 10-19-9w, rigging up rotary; Skelly Oil Co. No. 1 Sledd, NW NW SW section 27-19-9w, rig.

McPherson County

Continental Oil Co. No. 2 Myer, SE cor. section 19-21-1w, Graber pool, McPherson County, found Viola lime at 3,418 feet, had nothing showing; topped Wilcox sand at 3,455 feet and was dry and abandoned at 3,460 feet, total depth.

Same company's No. 2 Boechner, NE NE SE section 29-21-1w, was a location.

Cowley County

Trees Oil Co. No. 3 Lewis, NE NW NE section 28-31-4e, an old well in the Hittle pool, Cowley County, was deepened from 2,500 feet to Arbuckle lime at 3,325-28, total depth, pumped 219 bbls. of oil the first four hours, 183 bbls. the next four hours and made potential of 1,099 bbls., recompleted.

B. B. Blair and Continental Oil Co. No. 2 Dunlap, NW NW NE section 21-32-5e, Frog Hollow pool, was a location. G. M. Smith and Pryor & Lockhart No. 2 Wilson, NE NW NW section 9-33-6e, had spudded. Barnsdall Oil Co. No. 1 Elliott, NE cor. section 5-31-5e, was a location.

Butler County

Sid Neff and others No. 1-A Drumm, C NE SE section 12-26-4e, Butler County, topped Kansas City lime pay at 1,960 feet, total depth 2,020 feet, water intruded and it was plugged back to 1,990 feet. It was acidized and completed for 25 bbls. of oil daily.

Simpson Oil Co. and others No. 3 Steinhoff, NW NE NE section 28-29-6, was fishing at 1,600 feet. Roy Ramsey No. 2 fee, NE NE SW section 8-24-5, was drilling at

(Continued on Page 114)

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FOOTAGE TABULATION

Well No. 1	Drilled and cored	8,200 ft.
Well No. 2	Drilled and cored	8,200 ft.
Well No. 3	Drilled and cored	10,400 ft.
Well No. 4	Drilled (when blocks were removed for examination)	1,200 ft.

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Hook	4,705 lbs.
Elevator and Links	1,100 lbs.
Wire Line	2,000 lbs.
Drill Pipe and Tool Joints	185,000 lbs.
Drill Collar	1,300 lbs.
Bit	60 lbs.
	204,245 lbs.

(102 tons Dead Weight, not counting the "falling" energy developed by the rig.)

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North and East Texas

By
D. H. STORMONT

May Extend K. M. A. Strawn Sand Into Wilbarger County

WICHITA FALLS, Tex., Aug. 15.—The week in the North Texas district was featured by wildcat and extension activities, including new locations, failures, and completions in the K.M.A. field, the Hull-Silk pool and the deep Cooke County area.

One of the most important wildcat tests in North Texas is Target Drilling Co. No. 1 W. T. Waggoner, section 27, Block 6, H.&T.C. Survey, Wilbarger County. It is indicating a possible extension of the 3,800-foot Strawn pay of the K.M.A. field into Wilbarger County. It is about 1½ miles north of the Lloyd H. Brown No. 1 Waggoner, deep failure, 3 miles west of the closest K.M.A. production. The test was reported to have topped the lime at 3,908 feet. This is approximately 100 feet higher than the Brown wildcat and may place it higher structurally on the producing horizon.

Three miles south of Wichita Falls, Continental Oil Co. and Petroleum Producers No. 1 State Hospital Lands, which was called a new pool opener several weeks ago, is being cleaned out to deepen after failing to make a commercial producer from its total depth of 5,129 feet.

A new northeast outpost to the K.M.A. field was staked by Dorian & Mitchell as their No. 1 T. L. Burnett and others. It is in the H.&G.N. Survey, Abstract 165, and is about a mile due east of the old King Oil Co. No. 1 Burnett, dry hole, at 4,250 feet.

Archer County

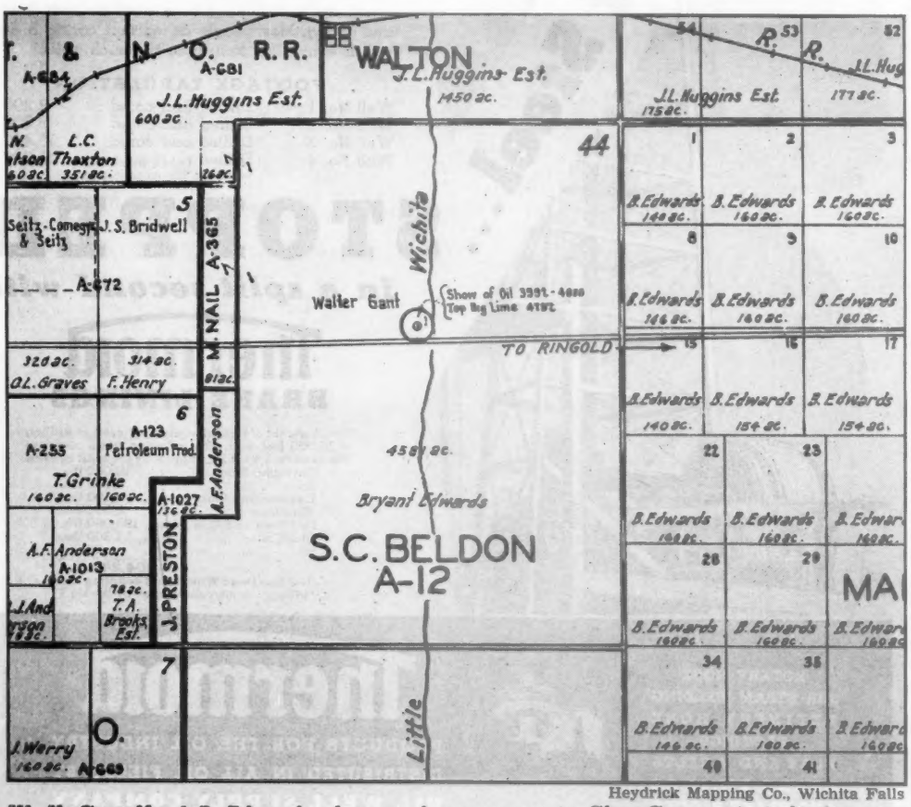
The 3,800-foot pay horizon of the Hull-Silk pool in north central Archer County got its first new location in several weeks when Blackwell Oil & Gas Co. staked No. 3 Wilson as a northwest offset to Ligon & Burns No. 1 Nichols, Block 30, A.T.N.C.L. Survey, which was completed in the 4,300-foot pay section and is shut in without pipe line connection. The new test is about one-half mile southeast of the discovery well in the area.

Whether the 3,800-foot horizon of the field will receive many more new locations will depend largely upon the outcome of L. T. Burns No. 1 Aherens, a north offset to Thurman & Lipscomb No. 1 Wilson, which extended the pool almost a mile to the north and west. The operator has run tubing and is preparing for final gauge. The largest flow of the well has been 50 bbls. in one head. Saturation was encountered from 3,931-62 feet.

Fain-McGaha Oil Corp. No. 1 McCrory, section 44, A.T.N.C.L. Survey, which gave northern Archer County a new deep pay oil pool, was placed on pump and in the last 40-hour period made an average of about 20 bbls. of oil per hour with approximately 1½ bbls. of water.

Cooke County

Northwestern Cooke County's new deep Walnut Bend field got its first setback when three drill stem tests netted only salt water in Sinclair Prairie No. 1 H. Putnam, 1,000 feet northwest of No. 1 Best, discovery well. The test was credited with having cored 5 feet of saturation from 4,990-95 feet, which is approximately 91 feet lower than the same horizon in the discovery well. After the salt water showings, it was plugged back to 4,937 feet where 20 feet of oil bearing sand from 4,915-35 feet will be shot in an attempt to gain commercial production.



Heydrick Mapping Co., Wichita Falls

W. H. Gant No. 1 B. Edwards, deep exploratory test in Clay County, is indicating production from the lower Strawn formation as it cores below 6,034 feet

Clay County

Two important wildcat tests in Clay County had much attention over the week. W. H. Gant No. 1 B. Edwards, S. C. Beldon Survey, 6 miles east of Henrietta, was preparing to core deeper after production attempts failed from slightly saturated lime and streaks of shale from 5,994-6,034 feet. The wildcat is about 6 miles northwest of the 3,900-foot Worsham pool. About 10 miles south of Henrietta, L. T. Burns No. 1 M. M. Lyles, Block 27, St. Augustine University Lands, was drilling below 4,850 feet seeking to tap the prolific lower Strawn horizon of North Texas.

EAST CENTRAL TEXAS

DALLAS, Tex., Aug. 15.—Activity in East Central Texas centered on a few scattered wildcat tests. The East Texas field showed an increase in activity with 62 wells drilling and 34 locations staked, against 87 wells drilling and 24 locations for the previous week. There were 25 wells completed for an aggregate initial production of 1,257 bbls. as compared with 27 completions a week ago for an initial of 1,166 bbls.

The outcome of Kaufman County's wildcat test, McGee No. 1 Prichett, near Tolosa and in the southwestern corner of the county, will be known within a few days. Operators have landed 3,088 feet of 5½-inch casing on bottom and are preparing to drill deeper into the Woodbine which was topped at 2,890 feet and reported to have carried slight odors while drilling to the present depth. East Central Texas received three new wildcats, one each being in Hill, Limestone, and Rains counties. In Hill County, J. M. Russell staked No. 1 H. F. Holland, in the S. C. White Survey, 1 mile southeast of Abbott.

Central Limestone County, which had a new test spudded during the week, received another new location as the week closed. Johnson No. 1 Speight, about 8 miles south of Mexia and in the A. Varella Survey, has set surface pipe. The new location was staked by Strowd Gas Co. as its No. 1 S. Adkins, a mile west of Groesbeck and also in the A. Varella Survey. Rains County received the third location when McKinley & Hastings staked No. 1 McTaggart in the B. Miller Survey, 1 mile west of Emory.

EAST TEXAS FIELD COMPLETIONS

(One-hour tests)

Gregg County—Longview Area

Arkansas Fuel Oil Co. No. 17-B J. C. McKinley, 3,630-52 feet, 64 bbls. Cities Service No. 19 J. W. Aiken, 3,543-3,614 feet, 60 bbls. Joe Long Drilling Co. No. 32-A W. W. Owens, 3,616-24 feet, 60 bbls. Stanolind Oil & Gas Co. No. 31-B F. K. Lathrop, 3,572-3,615 feet, 40 bbls.; No. 13 Lee, 3,590-3,623 feet, 27 bbls. Stewart Holdings No. 4 F. K. Lathrop, 3,586-98 feet, 40 bbls. Sun Oil Co. No. 20 J. T. Lakken, 3,651-56 feet, 55 bbls.

Gregg County—Kilgore Area

Atlantic Refining Co. No. 21 L. P. Griffin, 3,532-3,660 feet, 58 bbls. Gulf Oil Corp. No. 11 W. Clayton, 3,535-51 feet, 60 bbls. Magnolia Petroleum Co. No. 12 Sam Carr, 3,428-40 feet, 128 bbls. Shell Petroleum Corp. No. 8-B B. F. Laird, 3,607-78 feet, 40 bbls. Tide Water Associated No. 7 J. B. Watson, 3,585-3,610 feet, 60 bbls.

Rusk County—Joiner Area

Gulf Oil Corp. No. 17 L. P. Thrash, 3,713-20 feet, 56 bbls. Hunt Oil Co. No. 20-D D. Bradford, 3,555-3,604 feet, 8 bbls.; No. 20-B D. Bradford, 3,592-3,642 feet, 7 bbls. Sotton-Hawkins No. 7 R. J. Vinson, 3,587-3,603 feet, 40 bbls.

(Continued on Page 105)

Texas and Louisiana Gulf

By NEIL WILLIAMS

Showing of Oil in Distillate Field in Beauregard Parish

HOUSTON, Tex., Aug. 15.—A scheduled production test on an outpost well which has shown evidence of opening the first oil production in the Bancroft distillate field, Beauregard Parish, Coastal Louisiana, and the opening of new horizons in several other fields throughout the district were the outstanding developments along the Gulf Coast.

Republic Production Co. was running 7-inch casing preparatory to testing No. 1 Columbia Land & Timber Co., 1 mile southwest of the Bancroft discovery well in Beauregard Parish. The hole is bottomed at an estimated total depth of 7,393 feet, and casing was ordered cemented after a 10-minute drill stem test at 7,380-93 feet tested four joints of oil and 800 pounds of working pressure. While details of the core record were not available, the sand section is believed to be the upper Cockfield section, which will open production from both the upper and lower sections of this formation. The discovery well, No. 1 Lutcher-Moore Lumber Co., is producing distillate through perforated casing at 7,572-79 feet.

Deeper Cheneyville Sand

On the Cheneyville salt dome, Rapides Parish, Amerada Petroleum Corp. completed No. 5 Weil Land Co. for an initial production of 512 bbls. per day through a 20/64-inch choke. This well, producing from a deeper sand, was drilled to a total depth of 6,874 feet and the completion was made through perforated casing at 6,220-50 feet. It is one of the best producers on the structure which was proven a salt dome during the first six months of the year. Production heretofore has been confined to the Cockfield formation at 5,700 feet.

In the Lafitte field, Jefferson Parish, Texas Co. was preparing to complete its twenty-sixth consecutive producer which will add an extension of several hundred feet. No. 11 Lafitte, section 19-17s-24e, is bottomed in oil sand at 10,106 feet and 7⅝-inch casing was cemented at 10,085 feet.

Humble Oil & Refining Co. added a shallow sand producer to the North Crowley field, Acadia Parish, with No. 3 Ohlenforst, section 34-8s-1e. The completion was made in sand at 7,177-94 feet, and the well had an initial flow of 470 bbls. per day through a 13/64-inch choke. No. 1 H. J. Thevis is a new location in section 34.

Quarantine Bay

The first production test to be made on Gulf Oil Corp. No. 4 State, which is attempting to open a new horizon in the Quarantine Bay field, Plaquemines Parish, resulted in a flow of salt water. The test was made through perforated casing at 10,745-60 feet. Perforations have been squeezed off and another test will be made.

In the Valentine field, Lafourche Parish, Pan American Production Co. was attempting to complete No. 2-B Community which has shown evidence of opening production from a deep sand. It is in section 58-17s-20e, about a half mile south of production. Sand and sandy shale showing oil was topped at 9,300 feet, and cored to 9,325 feet where a seven-minute drill stem test at 9,290-9,325 feet, showed 33 stands of pipe line oil. Seven-inch casing was cemented at 9,290 feet. If productive, it will be the sixth producing horizon to be developed by the company on this salt structure.

West Gueydan

Salt water made its appearance in Pure Oil Co. No. 1 Ferguson, the discovery well of the West Gueydan field, Vermilion Parish. After the well was shut in for several days, it was opened on a quarter-inch choke on the tubing and came in making 100 per cent salt water. However the salt water soon decreased and the well is flowing approximately 200 bbls. of fluid per day of which 50 per cent is salt water and the balance pipe line oil. The action of the well since completion has been rather freakish. It was originally completed as a distillate producer through perforated casing at 7,140-50 feet, and started flowing pipe line oil at the rate of approximately 400 bbls. daily, a few days after completion. It is expected to be reworked if the salt water continues to increase. Drilling operations were started on the company's No. 1 Reese southeast of the well, and by Pure Oil Co. on the Vermilion Irrigations lease, northeast of the producer.

Hester Discovery

Continental Oil Co. No. 1 Realty Operators, the discovery well of the Hester salt dome, St. James Parish, continues to show an increase in production and is flowing 188 bbls. of 41.2-gravity oil per day through a quarter-inch choke. It was originally brought in as a distillate producer through perforated casing at 6,358-64 feet, but started making pipe line oil shortly after completion. The company's No. 1 Colonial Sugars, section 46-12s-5e, is coring in sandy shale below 8,372 feet.

On the Evergreen prospect, Avoyelles Parish, Magnolia Petroleum Co. is moving in material for No. 1 W. G. Bowden, in the NE quarter of section 7-2s-4e.

Additional acreage on the recently opened northwest flank of the Jennings field, Acadia Parish, was opened for development following completion of Superior Oil Co. No. 13 Leckelt, in a deeper sand at 7,597-7,612 feet. The well is several hundred feet west of production, and the sand section, although deeper than other producers, is believed to be the "Heywood" sand found about 1,000 feet shallower in wells closer to the dome. The well is about a quarter of a mile from production in section 42-9s-2w.

Cedar Point

The most interesting news along the Texas Coast was completion of Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1-94 State, which opened Miocene production in the Cedar Point field, in Galveston Bay. After recovering pipe line oil on a drill stem test last week at a total depth of 4,430 feet, 7-inch casing was cemented at 4,410 feet, and the well flowed an initial production of 12 bbls. per hour through a quarter-inch choke with tubing pressure 275 pounds. This well is a north offset to Frio production, and was completed in a sidetracked hole after salt water was tested in the deeper sand.

On the McFaddin Beach salt dome, offshore from Jefferson County in the Gulf of Mexico, Humble Oil & Refining Co. is driving piling foundation for No. 8-B McFaddin Estate in section 7. No. 6 McFaddin, 1,980 feet northwest of No. 1 State, is drilling in shale below 2,115 feet.

Miocene production in the Clinton field, Harris County, was defined in two directions by abandonments of dry holes drilled by Stanolind Oil & Gas Co. No. 1 Barraco, south of production, was quit at 4,166 feet, while No. 3 Sanders, northwest of production, was abandoned at a total depth of 3,806 feet. Several production tests were made on the latter well, but all showed salt water.

In the Clear Lake field, West Production Co. is drilling below 5,000 feet on No. 4 West fee, about 6,600 feet southeast of No. 1-A West fee in the J. B. McKinstry Survey. This is the fourth well to be drilled on the structure.

Fairbanks Field

Union Producing Co. No. 1 Goodykoontz, 1½ miles northeast of the Fairbanks field, Harris County, was completel for an estimated 20,000,000 feet of dry gas per day. Final completion was made through perforated casing at 7,175-85 feet. As this well had sufficient showings in several horizons below its present producing depth, additional development is expected in the near future.

In the field proper, several outpost tests were being watched. Probably the most important is W. V. Bowles No. 3 Galloway, about 4,000 feet north of production. It is being drilled "tight" and no details of core records or geological markers are available, although it is reported it is below 6,810 feet, which is near the producing level. East of production about 4,450 feet, Stanolind Oil & Gas Co. No. 1 Fritz is drilling below 5,000 feet and should reach the expected pay horizon the first of the week. Southwest of production, Housch and Thompson have started drilling No. 1 Fisher Estate in the T. Hogan Survey.

The Eureka field, Harris County, was apparently extended 1,200 feet to the west as Tide Water Associated Oil Co. prepares to complete No. 2-A Laura Lackner. Sand showing oil was topped at 7,680 feet and cored to 7,715 feet. The hole is bottomed at 7,740 feet and casing was cemented on bottom.

Two Wildcats

Only two wildcat locations were reported for the district. In the Crosby area, Harris County, Humble Oil & Refining Co. staked location for No. 1-A Keller in the W. Whitlock Survey. Actual foot measurements are 2,000 feet from the east line and 900 feet from the south line of the Keller 900-acre tract. In Montgomery County, 1 mile south of the town of Montgomery, in the Z. Landrum Survey, W. L. Todd and others are moving in material for No. 1 I. L. Martin.

In the Segno field, Polk County, Gulf Oil Corp. cemented 7-inch casing in No. 11 Wing, bottomed in the upper Saline Bayou formation at 6,662 feet. Sand having an oil and gas odor was logged at intervals at 6,516-93 feet, and a drill stem test of this section with the seat of the testing tool at 6,562-68 feet, recovered 120 feet of distillate and 400 pounds of pressure. This is the second well to test the upper Saline horizon. It is in the I.&G.N. Survey No. 14.

The second producer in the Cheek field, Jefferson County, was promised by Shell Petroleum Corp. No. 1 Pleasant in the C. Hildebrand Survey. A drill stem test at 7,711-21 feet tested 17½ bbls. of 35-gravity oil and after an unsuccessful test at 7,720-26 feet, total depth, the company was running an electrical survey and was expected to cement casing for completion.

J. R. Turnbull continues to test No. 1 Casey at the Cotton Lake field, Chambers County, in an attempt to get it to flow. The well is about 1,200 feet southwest of production and flowed an estimated 5 bbls. of oil per hour through perforated casing at 6,465-95 feet, before going dead. Gillespie and others No. 1 Lawrence, 1,252 feet due west of Humble Oil & Refining Co. No. 1-B Lawrence, perforated casing at 6,489-96 feet, and flowed 145 bbls. per day through a quarter-inch choke.

In the Bay City field, Matagorda County, Atlantic Refining Co. perforated casing in No. 1 Gola, north of production in the E. Hall Survey and is flowing 25 bbls. of fluid per hour through a quarter-inch choke, of which 70 per cent is oil and the balance salt water. Perforations were made at 8,131-35 feet. In the same county, in the Wilson Creek field, south of Buckeye production, United North & South Development Co. is moving in material for No. 2-A Stoddard, 1,320 feet due south of No. 1-A Stoddard in the G. B. M. Cotton Survey.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: Stanolind Oil & Gas Co. No. 5 Droegemyer, perforated casing 5,893-5,902 feet, 634 bbls., quar-

(Continued on Page 100)

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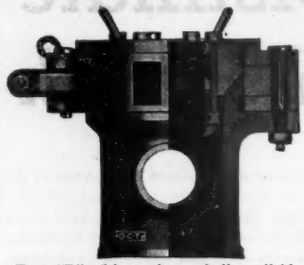

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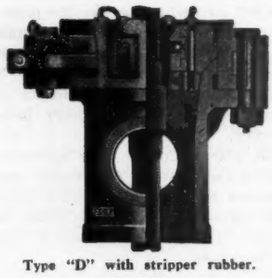

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Among the Drilling

F. W. BLACK, Osawatomie, Kans., is drilling for shale gas a mile south of town near the highway; if shale gas is not found he will drill to the Bartlesville sand found in that vicinity at a depth of 560 feet.

HUMBLE OIL & REFINING CO. plans four additional tidal oil tests in the Gulf of Mexico, according to application filed at the U. S. engineer's office in Galveston.

The location of the tests is approximately 8 miles east of High Island on state Tract 7. The derricks will be located 1,010, 1,340, 1,670 and 2,000 feet offshore.

The application will be referred to the War Department for consideration. Any protests against the proposed operations from the standpoint of a menace to navigation should be received at the U. S. engineer's office in Galveston.

SOUTH AND WEST of Colquitt, Claiborne Parish, Louisiana, on the northwest flank of a block of Standard Oil Co., A. G. Oliphant has taken nearly 900 acres in sections 4-, 5-, 8- and 9-22-6. In sections 2-, 3-, 10- and 11-23-4 Texas Co. has recently added 260 acres to its holdings.

FOUR MILES northwest of Fordyce, Ark., a new Dallas County block of 6,000 acres has been completed by J. T. Marwick and others, centering around section 20-10-13. Operators must start a 3,500-foot operation by August 15. Several shallow tests have been drilled in the immediate area.

A NEW SHELBY COUNTY wildcat block of between 6,000 and 7,000 acres has been assembled by the Pure Oil Co. north and west of Center. The acreage is distributed in the John Inman, Jesse Amason, M. M. Van, Z. C. Walker and nearby surveys. The town of Center itself is located in the Amason Survey. Humble Oil & Refining Co.'s block southwest and northeast of Center now totals approximately 15,000 acres.

OILWELL DRILLING CO. of Dallas, Tex., has completed another well and is drilling three others on its holdings in the Harper pool of Ector County, West Texas. The company is one of the larger operators in the area and has completed many wells in both the Harper and the Jordan pools of the county. Its No. 4-B Cowden, section 14, Block 44, was completed for 1,406 bbls. of oil in 24 hours on railroad commission gauge, after being shot with 815 quarts at a total depth of 4,224 feet. No. 4-A Cowden is now drilling below 2,550 feet; No. 8-A Cowden is drilling below 4,056 feet and No. 5-B Cowden is drilling below 2,945 feet.

STANDARD OIL CO. of Louisiana has placed on record leases covering approximately 800 acres centering around section 2-19-15, Union County, about 2 miles east of production in the south end of the El Dorado field. West of Strong, centering around section 36-18-13, considerable buying continues, with Carl G. Bennett taking options on many leases. Four miles north of Strong Joe Modisett and others are drilling Union Sawmill No. 1, section 8-18-12, now past 5,310 feet.

BERT FIELDS DRILLING CO. of Dallas has contracted to drill an important wildcat in Ector County, West Texas. The test was staked by Ben Rogers of Midland who obtained the acreage from Owenwood Oil Co. Location is in section 6, Block 44, Township 2s, T.&P. Survey, 3¼ miles northwest of the Harper pool, and will be known as the Fields and others No. 1 R. M. Speer. The test is contracted to 4,500 feet unless commercial production of salt or sulfur water is encountered at a lesser depth. It will be drilled all of the way with cable tools and must be started before August 20; however, operator plans to start moving in material in the next few days. Texas Co., Shell Petroleum Corp., Magnolia Petroleum Co., Republic Production Corp. all hold acreage near the test.

M.B.K. DRILLING CO. has staked location for another test in the Wasson pool of northwestern Gaines County, West Texas. It is M.B.K. No. 2 A. L. Wasson, 440 feet from the north and east lines of section 52, Block AX, P.S.L. Survey. The new test is in the same section where the company recently completed its No. 1 A. L. Wasson, a mile and a quarter north and a location west of the discovery well in the pool, for an initial of 1,710 bbls. per day to extend production to the north.

LEE DRILLING CO. completed one of the largest wells in the Harper pool of Ector County, West Texas. It was No. 6 TXL, section 27, Block 44, T.&P. Survey. The well flowed 3,208 bbls. of oil in 24 hours after being shot with 680 quarts at 4,175 feet, total depth. Most wells in the field average from 1,000 bbls. to 1,500 bbls. on their initial gauge.

LOFFLAND BROTHERS established Miocene production in the Cedar Point field, Galveston Bay, Texas, with the completion of Salt

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Contractors

Dome Oil Corp. and Standard Oil Co. of Texas No. 1-94 State, which is flowing 12 bbls. per hour from a screen setting at 4,410-30 feet, the total depth. In Duval County another showing of oil and gas was cored in Standard Oil Co. of Texas No. 1 Dolores Garcia, a projected 7,000-foot wildcat. On the Hester dome, St. James Parish, Coastal Louisiana, Continental Oil Co. No. 1 Realty Operators, continues to show an increase in production. This well was completed last week and opened the first production for the parish. Preparations were being made to complete Fohs Oil Co. No. 1 Bayou Baptiste as a distillate well below 11,000 feet, while in Lafourche Parish and located in the Raceland field, two deep operations are reported for the Amerada Petroleum Corp.

ALLEN & MORRIS of San Antonio, Tex., abandoned an interesting wildcat in Nueces County for Seaboard Oil Co. which was drilled on the Lockett lease, near Corpus Christi. In the Turkey Creek field, Rutherford Oil Corp. No. 2 McKenzie is being completed through perforated casing at 5,388-90 feet, while at the Clara Driscoll field, Texas Co. No. 1 Richardson was being placed on the producing list as the well is flowing into the pits from perforated casing at 5,112-20 feet. In the Woodsboro area, Refugio County, I. J. Allen No. 1 Rooke, south of the discovery well, is being deepened. Other rotaries of Allen & Morris are in Jim Hogg County for Humble Oil & Refining Co., at Refugio for the W. R. R. Oil Co. and at the Luby field for the Seaboard Oil Co.

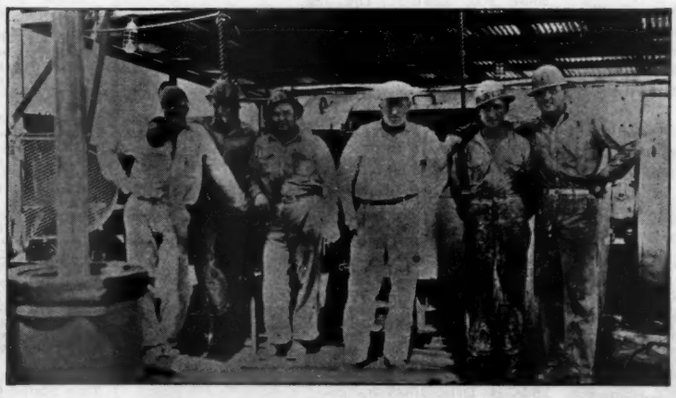
HOUSCH & THOMPSON have started drilling an interesting southwest outpost test for the Fairbanks field, Harris County, Texas. The well is about a mile from production on the Fisher Estate lease in the T. Hogan Survey.

AL BUCHANAN DRILLING CO of San Antonio, Tex., is drilling below 6,500 feet on a projected 12,000-foot test for the Hiawatha Oil & Gas Co. in the Seadrift area of Calhoun County, Texas.

GLENN H. McCARTHY is preparing to start two wildcats in Brazoria and Matagorda counties, Texas. One well is in the Pearland area on G. C. Street lease in the D. H. M. Hunter Survey. In the Palacios area, Matagorda County, No. 1 Moffett and others was scheduled to be spudded. Both wells are being drilled for himself.

SMITH & McDANNALD have apparently extended the Eureka field, Texas, closer to the Houston City limits as Tide Water Associated Oil Co. No. 2-A Lackner, a west extension test, is being completed after coring a good section of oil sand. The hole is bottomed at 7,740 feet and casing was cemented on bottom.

NICKLOS DRILLING CO. is attempting to open a deep horizon at the Valentine field in Lafourche Parish, Louisiana, for the Pan American Production Co. The well is on the 2-B Community lease, about one-half mile south of production and tested several hundred feet of pipe line oil on a drill stem test at 9,290-9,325 feet. Casing was cemented on top of the oil sand and a production test was being made. Another rig of Nicklos Drilling Co. is operating in the same field, while three others are located in the Villa Platte field, Evangeline Parish, for Continental Oil Co.



One of Loffland Brothers' drilling crews which was sent from the Mid-Continent fields with a large rig to drill several wells to the 11,500-foot sand in the Rio Bravo field of California

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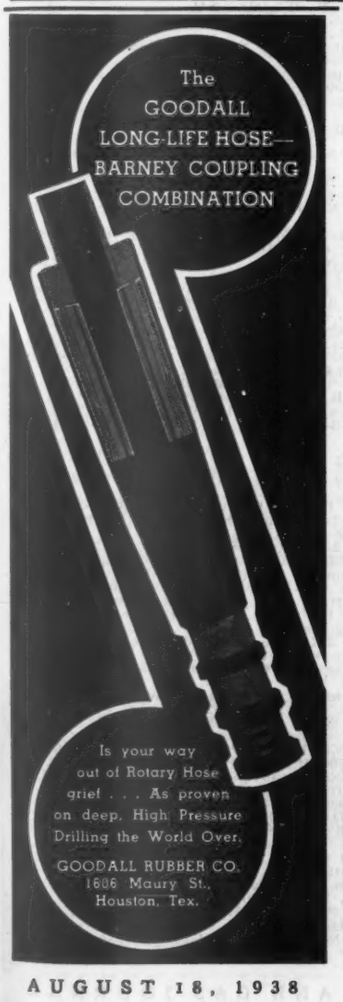

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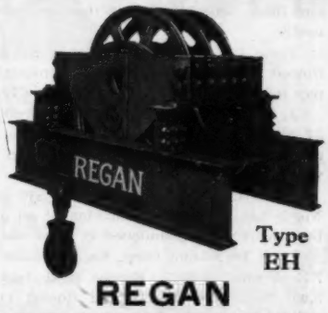

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Rocky Mountain Area

By
T. R. INGRAM

Deep Test in Denver Basin; N. Dakota 10,000-Foot Hole

DENVER, Colo., Aug. 15.—Colorado's deep wildcat in the Denver basin, to be drilled by Plymouth Oil Co., is to be an interesting test. There were no completions.

Wyoming had three completions, two in the Osage field and one in Warm Springs field. One of the Osage wells attracted considerable attention as it found sand production in a shale area which made 96 bbls. the first 24 hours at 215 feet. Six new operations were reported in as many counties.

Montana had no completions, one well abandoned and two new operations. The Indian Territory test in the Big Lake district was abandoned in the Madison at 6,002 feet.

The Rocky Mountain area has its first 10,000-foot hole in the California Co. test on the Nesson anticline in North Dakota.

NEW MEXICO

The Vacuum area with five completions paced New Mexico the past week, when a total of 22 completions in the southeastern district were recorded to make it one of the busiest seven-day periods in several weeks. The completions included 14 oil wells and two gas wells in Lea County and two oil wells in Eddy County. Lea County completions were:

Amerada Petroleum Corp. No. 3 State VA, C NE SW section 23-17-34, Vacuum area, topped pay at 4,566 feet, total depth 4,662 feet, flowed 141 bbls. of oil, naturally.

Magnolia Petroleum Co. No. 13 State-Bridges, C SE SE section 26-17-34, flowed 462 bbls. of oil daily from pay topped at 4,619 feet, total depth 4,725 feet.

Texas Co. No. 4-O State, C NE SE section 36-17-34, had pay at 4,670 feet, was bottomed at 4,710 feet, and flowed 179 bbls. of oil through tubing.

Same company's No. 5-O State, C SE NW section 36-17-34, found pay at 4,660 feet, total depth 4,725 feet, and flowed 206 bbls. of oil through tubing choke, naturally.

Texas Co. No. 6-O State, C NW SE section 36-17-34, flowed 263 bbls. of oil naturally through tubing, from pay found at 4,646 feet, total depth 4,725 feet.

J. M. Rush No. 2 State, NW NW SE section 20-20-37, Skaggs area, topped pay at 3,800 feet, was bottomed at 3,835 feet, and flowed 170 bbls. of oil in eight hours, with 500,000 feet of gas.

Texas Co. No. 3 Lea, SW NE SW section 14-20-34, North Lea pool, had a showing of oil at 3,600-07 feet, but was dry and abandoned at 3,708 feet, total depth.

Shell Petroleum Corp. No. 3-H State, C W half SE NE section 13-21-35, Eunice field, had pay at 3,835-3,907 feet, total depth, and flowed 117 bbls. of oil through tubing in six hours, with 351,000 feet of gas.

Skelly Oil Co. No. 4 Baker, C SW NW section 27-22-37, an old well in the Penrose area, was recompleted at 3,679 feet, total depth, flowing 50 bbls. of oil daily, with 300,000 feet of gas.

Gulf Oil Corp. No. 1-E Mattern, C NW SW section 1-22-36, found pay at 3,730-90 feet, total depth, and had natural flow of 185 bbls. of oil through tubing, with 1,300,000 feet of gas.

Continental Oil Co. No. 4-E-17 State, C SW NW section 17-22-36, South Eunice pool, found pay at 3,675 feet, total depth 3,880 feet, plugged back to 3,708 feet, and produced 6,300,000 feet of gas.

Continental Oil Co. No. 1-B-17 Elliott, C NE NE section 17-22-37, had pay at 3,640 feet, total depth 3,703 feet, and flowed 138 bbls. of oil daily, with 560,000 feet of gas.

Western Gas Co. No. 1 Matkins, C SE SE section 15-23-36, Lynn area, had pay at 3,370 feet, was bottomed at 3,853 feet, plugged back to 3,642 feet, and had initial yield of 14,000,000 feet of sweet gas.

Repollo Oil Co. No. 5-B Whitten, NW NW NE section 4-24-36, Cooper field, flowed 13 bbls. of oil in four hours from pay topped at 3,568 feet, total depth 3,725 feet.

Parker Drilling Co. No. 2 Erwin, C W half NW SW section 35-24-37, had pay at 3,373 feet, total depth 3,481 feet, and flowed 500 bbls. of oil daily.

Anderson & Prichard Oil Co. No. 1 Stuart, C E half SW NW section 10-25-37, Langlie district, topped pay at 3,415 feet, total depth 3,444 feet, and flowed 14 bbls. of oil daily.

Same company's No. 2 Carlson-Harris, NW NE SE section 22-25-37, topped pay at 3,280 feet, total depth 3,366 feet, and flowed 28 bbls. of oil an hour.

Three wells were completed in Eddy County, as follows: Repollo Oil Co. No. 4-A Parke, NW SE NW section 27-17-30, Jackson field, had pay at 3,315 feet, total depth 3,450 feet, and flowed 365 bbls. of oil daily through tubing.

Nash, Windfohr & Brown No. 5-A Stevens, C SE SW section 13-17-30, topped pay at 3,385 feet, total depth 3,450 feet, and flowed 750 bbls. of oil daily.

R. L. Holcomb No. 1 State, SW NE NW section 22-17-28, was plugged and abandoned at 1,980 feet, total depth.

In Otero County, Fred Turner No. 1 Everett, C SE SE section 34-22-13, wildcat, had nothing showing and was abandoned at 3,945 feet, total depth.

In Chaves County, Grastorf & Caudill No. 1 Smith, C NE NE section 1-45-29, wildcat, was dry and abandoned at 3,686 feet, total depth.

Lea County

Addison Oil Co. No. 3 Knight, C NE NW sec. 27-24-37. Drlg. 1,625 ft.
Anderson & Prichard No. 3 Carlson-Harrison, SE NW SE sec. 22-25-37. Loc.
Anderson & Prichard No. 2 Stuart, SW SW NW sec. 11-25-37. Drk.
Anderson & Prichard No. 3 Wells, C NE NW sec. 5-25-37. Spud.
Cities Service and Repollo No. 3 Brunson, C SW SE sec. 4-22-37. Rng. csg. 3,585 ft.
Continental Oil Co. No. 2 Britt B-15, C W½ SW NW sec. 25-20-37. S.D.; repairs, 2,795 ft.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE sec. 6-21-37. Loc.
Continental Oil Co. No. 1 Jack A-29, NE NE NE sec. 29-24-37. Drlg. 3,470 ft.
Continental Oil Co. No. 1 Myer B-31, C NW SW sec. 31-20-38. R.U.R.
Continental Oil Co. No. 6 Reed, NE SW SE sec. 23-20-36. Drlg. 3,580 ft.
Continental Oil Co. et al No. 1 State G-36, C NW SW sec. 36-17-35. Loc.
Continental Oil Co. No. 1 State I-7, NE NW NE sec 7-17-34. R.U.S.T. 4,400 ft.
Continental Oil Co. No. 1 State A-36, C SE SE sec. 36-20-37. R.U.R.
Continental Oil Co. No. 1 State K-29, C SW SW sec. 29-16-37. T.D. 4,977 ft.; no shows.
Culbertson & Irwin No. 1 Dabbs, NE NE SW sec. 35-25-37. T.D. 3,331 ft.; rng. tbg.
Culbertson & Irwin No. 1 Henry, C N½ NW SW sec. 26-25-37. T.D. 3,330 ft.; C.O.; no test.
M. J. Delaney Drlg. Co. No. 1 State, C SE NW sec. 30-17-35. C.&P.
Getty Oil Co. No. 3-F State, C NW NW sec. 36-17-34. W.O.C. at 1,525 ft.
Great Western Prod. Co. No. 1 Leonard, C SE NE sec. 32-23-37. Drlg. 1,662 ft.
Great Western Prod. Co. No. 1-C State, C NE SW sec. 7-19-37. T.D. 4,081 ft.; P.B. 4,070 ft.; pmp. 17 B.O.P.D.; tstg.
Gulf Oil Corp. No. 4 Day, SE SW NW sec. 6-22-36. Drlg. 1,455 ft.
Gulf Oil Corp. No. 2-E Mattern, C NE SW sec. 1-22-36. C.&P.
Humble O. & R. Co. No. 6 Fopeano, C NE NE sec. 35-20-36. W.O.C. at 180 ft.
Magnolia Pet. Co. No. 2 Brunson-Argo, C NE NE sec. 9-22-37. Drlg. 3,695 ft.
Magnolia Pet. Co. No. 2 Corrigan, C SE SE sec. 33-21-37. W.O.C. 1,212 ft.
Magnolia Pet. Co. No. 1-L State, C SE SW sec. 21-17-35. Drlg. 3,755 ft.
Magnolia Pet. Co. No. 13 State-Bridges, C SW NW sec. 25-17-34. Drlg. 3,984 ft.
Magnolia Pet. Co. No. 14 State-Bridges, C SW NE sec. 25-17-34. Drlg. 3,320 ft.
Magnolia Pet. Co. No. 15 State-Bridges, C SW SE sec. 26-17-34. Drlg. 1,325 ft.
Maljamar O. & G. Co. No. 10 Baish, C SW NW sec. 22-17-32. T.D. 4,006 ft.; S.D.; repairs.
Maljamar O. & G. Co. No. 11 Baish, C NW NW sec. 22-17-32. T.D. 3,847 ft.; W.O.C.
Maljamar O. & G. Co. No. 4 Mitchell, C NE NE sec. 20-17-32. T.D. 4,097 ft.; tstg.
Maljamar O. & G. Co. No. 5 Mitchell, C NW NW sec. 19-17-32. T.D. 4,033 ft.; P.B. 4,030 ft.; acd. and swb. 25 B.O.P.D.
Jas. A. Mascho No. 2 Cloyd, C SW SW sec. 20-22-33. Rng. csg. 3,510 ft.
G. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; P.B. 3,643 ft.; shot and S.I.
John Menke No. 1 Alexander, C NW NW sec. 5-21-37. Drlg. 1,070 ft.
Ohio Oil Co. No. 2 State-McCallister, C NE SW sec. 25-17-34. W.O.C. 4,118 ft.
Ohio Oil Co. No. 1 State-Warn, C NW NW sec. 6-18-35. Cellar.
Ohio Oil Co. No. 1 State-Bridges, C NE NE sec. 20-17-34. C.&P.
Olean Pet. Co. No. 1 Boyd, C NW SW sec. 23-22-37. Cmtg. at 725 ft.
Olean Pet. Co. No. 1 Ferrell, C NE SE sec. 22-22-37. Drlg. 800 ft.
Parker Drlg. Co. No. 1-A State, C SW SW sec. 21-22-37. S.D.; repairs; 1,077 ft.
Penrose & Rowan No. 1 Christmas, SE cor. sec. 28-22-37. T.D. 3,690 ft.; head every 8 hrs.; est. 15 B.O. to head.
Lem Peters No. 1 Coll, NW SW SW sec. 26-22-37. Loc.
Lem Peters No. 2 L. J. May, C W½ SE SE sec. 27-22-37. T.D. 3,651 ft.; flwd. 40 B.O. in 1½ hrs.; tstg.
Lem Peters No. 2 T. O. May, NW NE NE sec. 34-22-37. R.U.M.
Phillips Pet. Co. No. 7 Santa Fe, C SE SW sec. 27-17-35. Drlg. 4,040 ft.
Phillips Pet. Co. No. 8 Santa Fe, C NW NW sec. 5-18-35. Cg. 4,622 ft.
Phillips Pet. Co. No. 9 Santa Fe, C SE SE sec. 21-17-35. Drlg. 3,807 ft.
Repollo Oil Co. No. 2 Hair, NW SW NW sec. 9-24-37. Drlg. 3,433 ft.
Repollo Oil Co. No. 2 Turner, SW NE SW sec. 29-21-37. Drlg. 3,750 ft.; 2,500 ft. O.I.H.
Repollo Prod. Co. No. 2 State, C SW SW sec. 32-17-35. Drlg. 3,220 ft.
Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,597 ft.; tstg.; S.O.
Shell Pet. Corp. No. 1-B State, C SE SE sec. 30-17-35. T.D. 1,580 ft.; rng. csg.
Shell Pet. Corp. No. 1-D State, C SW SW sec. 31-17-35. Drlg. 4,314 ft.
Shell Pet. Corp. No. 1-G State, C SE SE sec. 22-17-34. Drlg. 3,799 ft.
Shell Pet. Corp. No. 4-H State, W½ NE SE sec. 13-21-35. Drk.
Shell Pet. Corp. No. 1 Swigart, C NE SE sec. 25-17-34. Drk.
Skelly Oil Co. No. 1 Baker, C SW SW sec. 10-22-37. Loc.
Skelly Oil Co. No. 6 Baker, C SW NE sec. 27-22-37. T.D. 320 ft.; fsg.
Skelly Oil Co. No. 1-M State, C SW SW sec. 32-24-37. Drk.
Stanolind O. & G. Co. No. 4-B Langlie, C NW SW sec. 14-25-37. Cg. 3,310 ft.
Stanolind O. & G. Co. No. 5-B Langlie, C SE SE sec. 9-25-37. Drlg. 30 ft.
Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. T.D. 3,610 ft.; 200,000 ft. gas and S.S.O.; to re-treat.
Standard Oil Co. of Texas No. 1 State, C SW NW sec. 32-17-35. T.D. 4,705 ft.; P.B. 4,677 ft.; to test.
So. Pet. Explrn. Co. No. 3 Downes, C NE SW sec. 32-21-37. T.D. 3,450 ft.; S.D.; repairs.
Texas Co. No. 3 Black, C NW NE sec. 21-24-37. T.D. 3,600 ft.; P.B. 3,495 ft.; spraying 50 B.O.P.D.
Texas Co. No. 4 Black, C SE NW sec. 21-24-37. C.&P.
Texas Co. No. 3-A Falby, C SE NW sec. 8-22-37. Drlg. 3,609 ft.
Texas Co. No. 5 Fristoe, NW SE SE sec. 3-25-37. Cmtg. at 184 ft.
Texas Co. No. 2 Fanning, C NW NE sec. 4-26-37. Drlg. 200 ft.
Texas Co. No. 1 State, C NW SW sec. 35-17-34. Loc.
Texas Co. No. 1-N State, C SW SW sec. 30-17-35. T.D. 4,850 ft.; P.B. 4,693 ft.
Texas Co. No. 2-D State, C SW NW sec. 27-17-34. Drlg. wtr. well; T.D. 4,860 ft.; acd. and flwd. 1½ B.O. P.H.; R.U. pmp.
Texas Co. No. 3-Q State, C NW SE sec. 25-17-34. Drlg. 1,356 ft.
Texas Co. No. 1-R State, C NE NE sec. 6-18-35. T.D. 4,125 ft.; rng. Schlum.
Texas Co. No. 2-R State, C NW NE sec. 6-18-35. T.D. 4,675 ft.; pay 4,540 ft.; rng. tbg.
Tide Water Asso. Oil Co. No. 1-L State, C NE NW sec. 23-12-36. W.O.C. 3,173 ft.
Warren L. Todd No. 1 Lemon, C NW SW sec. 17-21-32. O.W.D.D.; old T.D. 3,752 ft.; drlg. 4,185 ft.
Twin Oil Co. No. 1 Hare, C SE SW sec. 33-21-37. Drlg. 580 ft.
Twin Oil Co. No. 1 Joyce-Pruitt, C SE SE sec. 31-21-37. Drlg. 3,700 ft.; 2,000 ft. O.I.H.
Twin Oil Co. No. 2 Corrigan, C NE NE sec. 4-22-37. Drlg. 3,140 ft.
Carr Drlg. & Explrn. Co. No. 1 State, C SW SW sec. 22-17-35. W.O.C. at 1,712 ft.; T.D.
Two States Oil Co. No. 3-B Cole, C SE NE sec. 16-22-37. Drk.
Two States Oil Co. No. 1-B Hill, C NE NW sec. 5-21-37. Drlg. 2,910 ft.
Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW sec. 28-24-37. Drlg. 3,170 ft.
Weiner No. 1 Parcell, C SW NE sec. 8-23-28. T.D. 4,498 ft.; S.D.O.
Weiner et al No. 2 Smith, NW SE NE sec. 4-25-37. R.U.S.T.

Eddy County

Adkinson Oil Co. No. 1 Brainard, SE SW SE sec. 5-18-27. Loc.
F. E. Baker No. 1 Eddy, NE sec. 12-22-27, T.D. 2,480 ft.; setting csg.
Carper Drlg. Co. No. 1 Day, NE NE NE sec. 3-19-31. Drlg. 120 ft.
D. & B. Oil Co. No. 3 Berry, NW SW NW sec. 20-17-30. T.D. 3,300 ft.; acd. and S.I.
D. & B. Oil Co. No. 3-A Jenkins, SW SW NW sec. 21-17-30. Loc.
Dominion O. & G. Co. No. 2 Johnson, C SE NE sec. 35-16-31. Drlg. 2,425 ft.
Dominion O. & G. Co. No. 3 Johnson, C NE SW sec. 35-16-31. Loc.
English & Harmon No. 1 Dougherty, NE NE SW sec. 3-17-27. Drlg. 1,540 ft.
Franklin Pet. Corp. No. 1 McIntyre, NW NE SE sec. 20-17-30. Drlg. 2,130 ft.
Fullerton Oil Co. No. 1-A Johnson, C SE NW sec. 35-16-31. Drlg. 3,364 ft.
Fullerton Oil Co. No. 1-A Little, C NE NE sec. 28-18-31. Drlg. 120 ft.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. Drlg. 2,275 ft.
F. G. Keys No. 2 State, C SE NE sec. 9-17-28. Rng. csg. 1,221 ft.
Harry Leonard No. 1 Texas, NW NW NE sec. 36-16-31. Rng. csg. 3,599 ft.
Martin-Yates No. 1 Bowers, SW SE SE sec. 31-19-27. Loc.
Paton Bros. No. 2 Ginsberg, C SE SE sec. 8-18-31. T.D. 3,185 ft.; flwd. 38 B.O.P.D.; to retest.
Peyton Bros. No. 1 Erwin, C SW SW sec. 9-18-31. Loc.
Premier Pet. Co. No. 1 Maddren-Beeson, NE SW SE sec. 28-17-30. W.O.C. 500 ft.
Repollo Oil Co. No. 3 Beeson, SE NE SE sec. 28-17-30. Cmt. 532 ft.
Rudco O. & G. Co. No. 5 Yates, C NE NW sec. 33-18-28. T.D. 2,759 ft.; pay 2,726-35 ft.; acd. and est. 5 B.O.P.D.
V. P. Welch No. 1 Lewis, SE SW SE sec. 5-16-28. Drlg. 2,945 ft.
Western Drlg. Co. No. 2-A Western, SE SE NW sec. 23-17-29. Drlg. 2,595 ft.; est. 5 B.O.P.D.
Neil H. Wills No. 2 Stovall-Wood, SE SE NW sec. 20-20-30. Drlg. 1,190 ft.
Yates-Dooley No. 1 Creek, C SW NE sec. 35-18-30. Drlg. 695 ft.

Chaves County

E. J. Fisher No. 1 Foster, C NW NW sec. 7-15-26. T.D. 562 ft.; W.O.C.
Nay Hightower No. 1 Billingslea, C SW NE sec. 28-11-30. Spd. and S.D.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. sec. 15-15-30. T.D. 2,485 ft.; S.D.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. T.D. 1,000 ft.; rng. csg.

De Baca County

N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW sec. 15-4n-24e. Drlg. 404 ft.

Otero County

Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. S.D. 3,785 ft.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., is building rotary rig for another test on the Pajarito structure 10 miles southwest of Albuquerque. Location is in same section as its No. 1 Pajarita, NW NW NE section 22-9n-1e, which was drilled to 5,104 feet in 1932, where it was abandoned. It had a show of oil at 3,834 feet to which horizon the present test will go. Location in section is not yet available.

Norins Realty Co., Inc., No. 2 Pajarito, sec. 22-9n-1e. Bldg. rig.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 10-11n-4e. T.D. 3,750 ft.; rng. 6⅝-in. to bttm.

McKinley County

New State Oil Co. No. 1, NE NE NW sec. 1-17n-9w. M.I.M.
Claude Walker No. 7 fee, SW SW SE sec. 20-20n-9w. Drlg. 250 ft.

Rio Arriba County

Continental Oil Co.-L. M. Hughes No. 1 Esquibel, unsurveyed; approx. sec. 1-28n-4e. Drlg. 970 ft.
Oil City Pet. Co. No. 1 Azotea, SW SW NE sec. 11-31n-2e. Spdg.

San Juan County

Continental Oil Co. No. 78 Rattlesnake, NW SW SW section 1-29n-19w, Rattlesnake pool, was completed in the Dakota at 830 feet for 51 bbls.

Jack Amenda No. 1, NE NE sec. 14-29n-13w. Drlg. below 100 ft.; (first report).
Al Greer No. 2 fee, SW SE SW sec. 10-30-11w. S.D. 660 ft. for 10-in.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. S.D. 1,893 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Belen gr., SE NW sec. 16-3n-1e. T.D. 2,965 ft. (C.D.); C.O.

Torrance County

Drice Co. No. 1 Garland, NE SE NE sec. 32-7n-7e. Drlg. 955 ft. after cmtg. caves 850-900 ft.; 8¾-in. cmtd. 770 ft.; (form. carried as Woolston Bros.).
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE sec. 32-7n-7e. T.D. 868 ft.; fsg.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW sec. 23-7n-1e. Drk.; W.O. rotary.
C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. T.D. 900 ft.; R.U.R.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE sec. 18-33n-1e. T.D. 303 ft.; W.O. 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C sec. 32-36-1w. T.D. 1,520 ft. in Mancos sh.; pulling 6-in. to S.R.; S.O. in several stray sds. 1 ft. or more thick.

Elbert County

Building of rig for the Plymouth Oil Co. No. 1 Brosky-Union Pacific, an important wildcat on the Rich structure, is going ahead rapidly, but it will be a week or two before it is ready to spud. A water well has been completed, but the supply is insufficient for the big rotary outfit and a line about 3 miles long is being laid from Antelope Creek, where cribbing is being put into the bed of the creek. Al Buchanan, of San Antonio, Tex., has the drilling contract and not the Buchanan Drilling Co., as previously reported. The company will have a geologist at the well during the entire drilling period.

This test is in the Denver basin and has for its principal objectives the sands in the lower Cretaceous. This is a departure from the theory which most of the wildcats in eastern Colorado have been drilled in the past three years. These were located on the high arches on the eastern rim of the basin, and the objectives were the horizons from the Pennsylvanian down to Ordovician.

Arthur Rich, Denver geologist, and his son, Gerald Rich, also a geologist, who spent five years in working out the regional and structural geology, are given credit for an unusual work undertaken under their supervision. A total of 1,037 wells with an aggregate of 70,000 feet of hole were drilled to obtain subsurface data. Churn-drills, hand drills, small rotary equipment and other types were used, and of these 300 were drilled for seismograph shooting. Three separate seismograph crews shot the area and 1,100 miles of traverse surveying was done. The blocks consist of 400,000 acres, of which 200,000 acres are within the closing contours of six structures. The area in which the structures are located is bounded by a line running from Calihan north to Barr Lake, east and southeast to Deer Trail, then on to Limon and thence back to Calihan.

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW sec. 19-10s-60w. Bldg. rig.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE sec. 2-19s-70w. T.D. 1,620 ft.; tstg. S.O.&W.

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DODGE

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE sec. 36-7s-88w. Res. 875 ft.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

J. G. Tomkins & Sons No. 1 Pressey, NE NE NE sec. 10-29s-69w. S.D. 411 ft.; (prospecting for coal).
S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27s-68w. S.D. 1,320 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW sec. 31-33n-9w. Drlg. 1,500 ft.; S.O. 1,285 ft.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. Drlg. 2,253 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Drlg. 5,950 ft.

Moffat County

Morapas Pet. Corp. No. 1 Coles, SW SW SE sec. 1-3n-92w. S.D. 2,750 ft. for 8¼-in.
C. R. Privett No. 1 Sutton, NE NE SW sec. 1-5n-96w. S.D. 530 ft.; to run and cmt. 10-in

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36s-17w. S.D. 4,720 ft. for repairs.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. gr. sdy. sh. 6,042 ft.; top Apache sec. 6,038 ft.; showing consid. gas.

Prowers County

Continental Oil Co. No. 1 Ruby, on the Cottonwood structure, has been delayed for three weeks by a fishing job resulting from the drill pipe becoming stuck while coring. Total depth is 5,065 feet. Top of the Mississippi lime is reported at 4,965 feet, where coring started. Showing of considerable oil around the rig has led to reports of saturation being cored. Officials state that oil was put into the hole and circulated in an attempt to loosen the drill stem and that no shows have been encountered. The drill pipe is being cut in sections and taken from the hole.

Continental Oil Co. No. 1 Ruby, C NE NW sec. 31-21s-44w. T.D. 5,065 ft.; fsg. D.P.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE sec. 29-19s-64w. Spd. Aug. 7.

C. E. Puckett No. 1 Barber, NW sec. 35-21s-66w. S.D. 700 ft.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w. Drlg. lower Penn. blk. sh. 2,505 ft.

Routt County

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE sec. 1-6n-86w. Drlg. 780 ft.; top Frontier 635 ft.; S.G.; little wtr. in base.
Craig & Moore No. 1 Erwin, C SW NE sec. 33-7s-85w. T.D. 1,042 ft.; U.R. 10-in. to set on bttm.

WYOMING

Big Horn County

A. L. Rankin No. 1 Karjala-Rankin, C SW NW sec. 10-54n-94w. S.D. 425 ft. for 8¼-in.
Prescott & Mileski No. 1 Govt., NE NW SW sec. 15-1n-93w. Drlg. 820 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. T.D. 2,420 ft.; fsg.

Campbell County

Frye & Kreiner No. 2, CSL NW NW sec. 6-50n-72w T.D. 723 ft.; rng. 5⅛-in. for W.S.O.; (first report).

Carbon County

Ohio Oil Co.-California Co. No. 5-A Kyle, C NE NW sec. 26-21n-79w. Loc.
Ohio Oil Co. No. 2-A Baker, NW SW SW sec. 2-23n-79w. Drk.; M.I.M.
Sinclair-Wyoming Oil Co. No. 3 Mahoney, C SE NW sec. 34-26n-88w. Drlg. 1,875 ft.
Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE sec. 26-21n-79w. Drlg. r.b. 7,020 ft.
Producers Oil Co. No. 1 Lake Valley, 200 ft. C of CNL sec. 14-20n-88w. Drlg. 1,916 ft.

Converse County

Jack Decker et al No. 1 Simonson, NW NE SE sec. 16-32n-68w. Drlg. 535 ft.
Wyshawn Oil Co. No. 2 Lindley, C SW SW sec. 35-32n-69w. Drlg. 1,050 ft. in Chugwater r.b.; S.O.&G. in Sundance.
Fred Bunker No. 1 Pestal, SE NE NE sec. 32-32n-69w. Drlg. 375 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW sec. 25-32n-69w. T.D. 670 ft.; rng. tbg. to test.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE sec. 34-32n-69w. T.D. 2,000 ft.; wtr. in Embar; M.I. steel rig from Salt Creek.

Fremont County

Lincoln O. & G. Co. No. 1 Shoshone, NW NW SE sec. 23-1s-1e. Drlg. 305 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. T.D. 3,378 ft.; fsg.
Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-1w. Drlg. 890 ft.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.

C. E. Nelson No. 8 fee, CWL NE SW sec. 27-3n-1w. Drlg. 400 ft.; (first report; Pilot Butte field).

Hot Springs County

D. D. Gibson No. 26 fee, SW NW SE section 35-43n-93w, in the Warm Springs field, which bailed at the rate of 25 bbls. per hour from the Embar at 1,054-63 feet before it was cased, was completed for 100 bbls. per day, or much better than the average well in that field. Saturation was found in a second break in the lime. Gibson No. 22 fee, an old producer, is being deepened to the second pay.

D. D. Gibson No. 22 fee, NE NW SW sec. 35-43n-94w. Drlg. 1,006 ft.
Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE sec. 13-44n-98w. T.D. 300 ft.; trying to set 20-in. at 215 ft. for W.S.O.
J. W. Bailes No. 1 Govt., SE SW sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.
California Explin. Co. No. 1 Govt., NE SE NE sec. 12-44n-97w. T.D. 4,100 ft. in Embar L.; tstg.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23-21n-117w. Drlg. 865 ft.

Natrona County

General Pet. Corp. No. 1 State, NW NE SE sec. 16-35n-77w. Spdg.
Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW sec. 26-40n-79w. T.D. 4,050 ft.; top Tensleep 3,892 ft.; cmtd. 6⅝-in. at 4,060 ft.; tstg.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. R.U.R.

Niobrara County

Continental Oil Co. No. 13 Tom Bell, SE NE SE sec. 33-36n-65w. Loc.
Ohio Oil Co. No. 11 Lamb Acct. 2, SW SE SE sec. 5-35n-65w. Rig.
Fall River Royalty & Producers Co. No. 1 Govt., CSL SE SE sec. 35-40n-61w. S.D. 275 ft. for 15½-in.; top Dak. 265 ft.
Continental Oil Co. No. 3 Apex-3, NW NE NW sec. 34-36n-65w. Drlg. r.b. 4,094 ft.; upper Sundance 4,006-34 ft. and 4,034-70 ft.; basal Sundance 4,070-90 ft.
Continental Oil Co. No. 7-B Schuricht, NW NW SE sec. 6-35n-65w. Loc.
H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. T.D. 1,127 ft.; U.R. to set csg. on bttm.

Park County

Ohio Oil Co. No. 1 Trans-Ark., CSL SW SW sec. 30-57n-98w. Drlg. rd. sh. 5,944 ft.
Valentine & Watson No. 1 Johnson, NE NE NE sec. 6-57n-99w. T.D. 2,490 ft.; fsg.; 1,300 ft. O.I.H.
Resolute Oil Co. No. 2 State, C SW SW sec. 16-57n-101w. Drlg. 5,775 ft.
Continental Oil Co. No. 1 Northern Pacific, SE SE NW sec. 23-58n-98w. Drlg. 1,921 ft.

Sublette County

Frontier Pet. Co. No. 1 Govt., SE SE SW sec. 1-28-114w. Drlg. 300 ft.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd ranch, SE SE sec. 31-31n-112w. S.D. 100 ft.
Wyo. Pet. Co. No. 1 Chas. Budd, C NE NE sec. 10-29n-113w. Drlg. 480 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE sec. 21-28n-113w. Drlg. 832 ft.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 79 Lost Soldier, SE NE NE sec. 10-26n-90w. Loc.; (first report).

Uinta County

Stove Creek Oil Co. No. 1 Govt., C SE NW sec. 26-14n-119w. Res. at 1,400 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW sec. 26-14n-119w. S.D. 300 ft.

Washakie County

Fison Oil Co. No. 1 Govt., CSL NE SE sec. 24-47n-90w (Sherard dome). Set 8¼-in. at 116 ft.; W.O.C.

Weston County

Production in the Osage field in July was 23,400 bbls. and refiners took 21,000 bbls., the remainder going to storage.

A completion of more than ordinary interest was reported in the Osage field at Bock & Jackson No. 1, NE NW NW section 31-47n-63w, which pumped 96 bbls. per day initially from sand at 197-215 feet. It is holding up remarkably well and at last reports was making 45 bbls. per day. The location is at the extreme north end of the field just south of Clay Spur. This is a territory in which wells produce small quantities of oil from the shale at varying depths.

The new well is producing from a sand in the Skull Creek shales known locally among the drillers as the Coffee Grounds sand. It lies about 150 feet below the Newcastle, or Muddy sand, and 40 feet above the Dakota. There are indications that this sand may be picked up across the field. F. T. Fletcher, deceased, drilled two wells on the Bock & Jackson lease and showed about the same as the present well. Charles Stough has several small wells in the NW NW section 4-46-63, about 2½ miles to the southeast, skirting the field on that side. The same sand was picked up in a well showing saturation in section 26-46-64, 5 miles to the southwest, on the edge of the field in that direction. The Newcastle sand is the producing horizon in the field. This lower sand offers excellent opportunities for testing, but in view of the fact that all the oil now being produced is not marketed, no rush is likely.

One other completion was the Wyoming Oil & Gas

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Co. No. 19, NW NW SE section 19-46n-63, which swabbed 40 bbls. per day from the Newcastle (Muddy) sand at 1,421-35 feet.

Updike Bros. No. 1, NE SW NE sec. 35-46n-64w. M. I.M.; (first report).
Hugh Updike No. 1, CEL NW SE sec. 15-46n-64w. R.U.
Federal Oil Co. No. 9, CNL SE SE sec. 15-46n-64w. Ready to spd.
Des Moines-Osage Oil Co. No. 15, SW SW SE sec. 30-46n-63w. Cmtd. csg. 1,367 ft.; top of sd.; W.O.C.
Geo. Keisling No. 1, NW NE NE sec. 35-46n-64w. Set 8¼-in. through Greenhorn at 1,160 ft.; top 1,029 ft.; W.O.C.
Gose Oil Synd. No. 1, NE NE NE sec. 28-47n-63w. C.O. after landing 4¾-in. at 4,900 ft.
West Osage Oil Co. No. 3, SW SE NE sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. T.D. 2,080 ft.; rng. 5⅛-in.

MONTANA

Crude oil production in Montana in June, as reported by the state oil conservation commission, was 412,757 bbls., a decrease of 12,914 bbls. as compared with May. Storage at the end of June was 1,692,627 bbls., a decrease of 33,044 bbls.

Carbon County

R. C. Tarrant No. 2, SE NW sec. 4-6s-18e. Drlg. 1,925 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. S.D. 1,810 ft.
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. Drlg. 2,000 ft.; 10-in. 1,788 ft.
Sha-Wa Pet. Co. No. 1 Govt., SW NW NE sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res.; will U.R. to bttm. and set csg.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE sec. 23-26n-3e. T.D. 1,690 ft.; ran csg. to bttm.; C.O.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE sec. 5-14n-55w. Drlg. 1,095 ft.

Fallon County

Montana-Dakota Utilities Co. No. 45-Unit 7, SE NW SW sec. 15-6n-60e. Drlg. 190 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 1,120 ft.

Glacier County

Santa Rita O. & G. Co. No. 4 Govt., SE SE SW sec. 5-32n-5w. R.O.G.; (first report).
K. D. Pardee No. 1 Tribal-179, SE NW SE sec. 12-32n-6w. R.U.
Dr. Peter Potter No. 3 All.-125, NE NW NE sec. 12-32n-6w. Cmtd. 10¾-in. 646 ft.; Colo. 617 ft.; W.O.C.
Lawler No. 3 Hoerr-Harlan, NE SW SW sec. 5-33n-5w. Drlg. 450 ft.
Glacier Prod. Co. No. 2 Mueller, CSL NE NE sec. 18-33n-5w. Drlg. 985 ft.; Colo. 570 ft.; 10¾-in. 600 ft.
A. R. Pardue No. 1 Tribal-171, SE SE SW sec. 7-32n-5w. T.D. 2,455 ft.; fsg.
Glacier Prod. Co. No. 3 State, NW NE NW sec. 16-33n-5w. Cmtd. 7-in. 2,860 ft.; W.O.C.
Santa Rita O. & G. Co. No. 1 State, NW NW SW sec. 36-34n-6w. Drlg. 2,100 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE sec. 16-35n-6w. Loc.
Texas Co. No. 2 Curran, C NW NE sec. 8-32n-5w. Drlg. 2,845 ft.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33-5w. T.D. 2,820 ft.; drlg. up bailer.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

Watson Oil Co. No. 1 Austed, SW NW SE sec. 22-13n-28e. Drlg. 445 ft.; (form. Sha-Wa Pet.).
O. B. Canfield No. 2 Govt., SE NE NE sec. 21-17n-24e. Drlg. 779 ft.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27n-4w. S.D.O. 1,932 ft. (C.D.); S.O. top Madison followed by wtr.

Stillwater County

Indian Territory Illuminating Oil Co. No. 2 Hepp, NW cor. section 25-1n-21e, Big Lake district, was dry and abandoned several hundred feet in the Madison lime at 6,002 feet, total depth. This was an old producer at 3,832 feet deepened as a test of the Madison. Contract depth was reached at 5,250 feet and remainder of hole was drilled on company account.

Teton County

California Co. No. 1 Unit, NE SE SW sec. 26-27n-9w Digging pits.
Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW sec. 5-27n-5w. Drlg. 2,300 ft.

Toole County

Big West Oil Co. No. 3 Engle, CSL SW SW sec. 1-35n-3w. T.D. 1,615 ft.; good S.O. in top Sunburst; rng. 7-in.
Lion Oil Prod. Co. No. 4 Haugen, NE SE SE sec. 11-35n-3w. T.D. 1,470 ft.; rng. 7-in.
C. D. Stock No. 3 Haggerty, SE NW SW sec. 13-35n-2w. Drlg. 1,270 ft.
Kluth et al No. 1 Gunderson, SE SW SW sec. 18-35n-2w. T.D. 1,600 ft.; rng. 7-in.
W. M. Cassidy No. 1 Phoenix, CNL NW NW sec. 28-35n-4w. Drlg. 600 ft.
Fulton-Commonwealth No. 2 Thompson, NW NE SW sec. 28-35n-3w. Cmtd. 12½-in. at 95 ft.; W.O.C.
General Oils, Ltd., No. 1 State, SW SE SE sec. 36-35n-4w. T.D. 1,856 ft.; Sunburst 1,590-1,620 ft.; contact 1,853 ft.; acd. with 800 gals.; tstg.
A. E. Crumley & Son No. 13 Fryberger, CNL NW SE sec. 24-35n-3w. T.D. 1,610 ft.; pmpg. 10 B.P.D. naturally; will acd. later.
Big West Oil Co. No. 2 Engle, SE SW SW sec. 1-35n-3w. T.D. 1,602 ft.; sd. 1,573-1,602 ft.; shot 70 qts.; no results; shot again 50 qts.
Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. T.D. 2,630 ft.; sd. 2,400-21 ft.; P.B. to Sunburst at 2,103 ft.; bailing to bring back gas.
R. G. Parrant No. 1 Engstrom, NW NW NW sec. 13-35n-3w. Spdg 60 ft.; (first report).
Caspen T. Olen No. 8 Engermoen, SW NE SW sec. 11-35n-2w. T.D. 1,630 ft.; acd. 500 gal.
V. F. Dahl No. 1 Kimball, SW SE SE sec. 1-35n-3w. T.D. 1,747 ft.; cont. 1,747 ft.; acd.; no results; S.D.
O. A. Newstad No. 2 Haugen, NW NW NE sec. 11-35n-3w. T.D. 1,848 ft.; acd. again; no results; stdg.
Pfabe & Engleking No. 2 Hurley, NE NE NW sec. 8-34n-2w. S.D. 1,456 ft.
H. C. Morton No. 8 Morton, C SW NW sec. 24-34-2w. S.D. 650 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW sec. 18-3n-23e. S.D. 4,565 ft.; to resume.
Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. T.D. 1,795 ft. (C.D.); fsg.

UTAH

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. S.D. 1,600 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE sec. 4-22s-19e. Drlg. 4,010 ft.

Summit County

Mountain Fuel Supply Co. No. 1 Wilde, NE SE SE sec. 9-2n-5e. Drlg. 4,289 ft.
Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

NEBRASKA

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW sec. 21-14n-37w. Drlg. sh. 1,200 ft.

Scotts Bluff County

Houston Pet. Co. No. 1 Judd, NE NE NE sec. 15-22n-57w. Spd. and S.D.

Sioux County

Felmont Oil Corp. No. 1, C SW NE sec. 21-27n-55w. S.D. 4,310 ft.; repairs.
Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE sec. 15-28-55w. T.D. 6,890 ft.; fsg. parted 10-in.; dropped 2,400 ft.

NORTH DAKOTA

Williams County

The Rocky Mountain area scored its first 10,000-foot hole this week when the California Co. No. 1 Kamp, on the Nesson structure, passed that mark and was drilling at last report at 10,160 feet. The record for the area previously was held by the test drilled by Amerada Petroleum Corp. No. 1 Morton, section 13-13s-68w, Laramie County, Wyoming, which two years ago reached a depth of 9,385 feet, where it was abandoned. The California Co. well began spudding in October, 1937. In January, this year, it cemented the 9⅝-inch on bottom at 6,747 feet and shut down for the winter. It resumed the first of April. Manning & Martin, Inc., have the contract. The test is on a block of 200,000 acres held by the California Co. Drilling depths only are being released.

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w. Drlg. 10,160 ft.

Eastern Fields

(Continued from Page 74)

trouble at 4,100 feet. The casing collapsed with the tools in it and has parted several times in pulling it.

New Work

In Hancock County, R. J. Braden Co. has locations for Nos. 65 and 66 on the C. E. Brenneman farm in Grant district. In Kanawha County, Owens Illinois Glass Co. has a location on the Garnet Wisman and others tract in Washington district.

In Ritchie County, Square Oil Co. has a location for No. 3 Merle Carpenter in Jefferson and Grant districts. In Murphy district, Costadon Oil & Gas Co. has a location on the Payton Tingler heirs, elevation 759 feet.

In Roane County, O. H. Reed and others have a location for No. 3 P. V. Litton in Harper district with Nos. 1 and 2 being fair producers. In this district, the American Oil Development Co. has a location on the G. M. Karickoff farm, elevation 1,065.13 feet.

In Tyler County, L. G. Pigott will drill on the W. M. Ash farm in Centerville district. In Wetzel County, Hazlett Brothers and Conley are down 60 feet in No. 3 Lane Mason farm, Proctor district. Carnegie Natural Gas Co. is drilling at 250 feet in the Robert Simmons test. Manufacturers Light & Heat Co. has reached 780 feet on the W. O. Kincaid farm. C. B. Lewis and others have reached 925 feet on the J. Ebert heirs. G. L. McIntire and others are down 125 feet in the Clark Parsons test. Hope Natural Gas Co. is drilling at 500 feet on the Estel Miller farm.

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Michigan Field Report

By
O. C. PRESSPRICH

Most Extensive Drilling Play in Two Years Is Under Way

SAGINAW, Mich., Aug. 15.—Michigan's most extensive drilling activity since the Buckeye discovery in June 1936 continues to center interest in the Overisel field, Allegan County, where three prolific producers and two failures were recorded during the past week. With more than 15 Traverse pay zone tests reported active in the area and the list of drilling permits mounting weekly, thorough exploration of the Overisel field seems assured.

The Allegan play overshadowed other developments in Michigan fields, in which July was the seventeenth consecutive month of production exceeding a million barrels. The 1,516,768-bbl. output of the state's 1,941 wells was a decline of 4,000 bbls. under June figures, however. Buckeye continued to lead Michigan fields, with a daily average flow of 19,472 bbls. Nine completed producers were logged in the state during the week, only four of them outside Allegan County. Nearly all active Michigan fields recorded dry holes, seven being reported.

May Define Overisel

Apparent limitation of the Overisel pool to the west and to the southeast was reported during the week as two tests in those directions proved failures, while three producers were completed nearer the discovery well, one a west offset to discovery, one on the discovery lease and one slightly southeast of discovery, in section 31 of Salem Township, which borders Overisel section 36. One of the dry holes is about three-quarters of a mile west of the discovery. The other is in Monterey Township, where section 6 corners Overisel section 36. With other tests in all directions nearing completion, the pool's extent was expected to be defined before another week had passed.

William J. Cline, discoverer of the Overisel pool, brought in his second well on the discovery lease, No. 2 Aldrich, SE SW SE section 36-4n-14w—a south offset to discovery. No. 2 gauged 800 bbls. naturally, and was equal in all respects to the discovery well. Structurally No. 2 was reported slightly higher in the Redrock and Traverse than No. 1. The west offset to the discovery drilled this week, Lentz & Miller No. 1 Scholten, SE SE SW section 36, was rated a 900-bbl. daily producer. This test is five locations west of the discovery. Westward extension of the producing Overisel pool appeared blocked by failure of William J. Cline No. 1 Pol, SE NE SE section 35, about three-quarters of a mile west of the discovery.

Hopes that the Overisel pool might extend southeasterly into Monterey Township were dimmed when H. H. Allen No. 1 DeYoung, NW NW NW section 6-3n-13w, was completed dry. This test was a diagonal southeast offset to Cline's Aldrich lease in Overisel.

Salem Township

Salem Township—eastern neighbor of Overisel—cut into production as the result of the Overisel discovery. Gordon Oil Co. No. 1 Perkins, SW SW SW section 31-4n-13w (adjoining section 36, Overisell) gauged 500 bbls. daily production. It was the first of the western Salem tests to be brought in as the result of the Overisel strike, most other Salem production being in the central and eastern parts of the township. The two producers in Overisel and one in Salem this week added 2,200 bbls. daily potential output to the field.

Monterey Township: Despite the dry test of H. H. Allen, which appears to block extension of the Overisel field southeasterly into Monterey, central and eastern development in the township was reported active. One small commercial producer was added this week at Muskegon Development Co. No. 1 Miller, NE NE NW section 16-3n-13w, rated at 50 bbls. daily after acid.

Trowbridge Township: A small producer was completed at Haynes Oil & Gas Co. No. 1 Hadden, SW SE SE section 20-1n-13w, gauged at 10 bbls. daily after acid treatment. The test was the only active location in the township.

Dorr Township: Cecil Runyan, Inc., No. 1 Kubiac, NE NW NW section 31-4n-12w, was completed dry this week. Eight other tests are drilling in Dorr Township.

Gladwin County

Buckeye Township: Two producers and a dry hole summarized drilling activity in Michigan's leading producing field. A failure, the exception rather than the rule in Buckeye, was recorded at James E. Flanigan No. 1 Fucsok NE NW SW section 4-18n-1w, a northwestern boundary test in the north (Wicklund) pool. Structures were reported low, and water cut into the test in the Dundee limestone. The two producers of the week in Buckeye were in the south (Oard) pool. T. F. Caldwil No. 3 Hostetler, NW SE NE section 27, continued to make favorable progress in extending south pool extension westward with a 100-bbl. natural well. Caldwell was the first operator to probe section 27 in a successful test when the productive area was some distance eastward. Rowmor Corp. added a producer in its No. 3 Foster, SW SE NW section 26, rated at 400 bbls. daily after acid.

Bentley Township: McClanahan Oil Co. No. B-1 State, SW NE NW section 18-17n-2e, failed to rate commercial production, and was abandoned this week. The test logged a small show 87 feet in the Dundee lime. The wildcat was nearly 2 miles northwest of the developed and producing section of Bentley.

Midland County

Edenville Township: Western extension of the producing pool appeared definitely blocked with another failure in that sector at Sun Oil Co. No. D-1 State-Edenville, SE NE SE section 28-16n-1w, found dry. North, west and south tests all within 1½ miles of Chapman's discovery now border the field with dry tests. Turner Petroleum Co. acidized its No. 2 Verity, SE SW NW section 26, east of the discovery, and gauged a 50-bbl. producer. In the natural state the test was reported at 100 bbls. last week, but production declined, and acid treatment failed to help production. Two tests were reported nearing pay zones.

Jerome Township: Michigan's deepest active oil test at Sun Oil Co. No. B-1 State-Jerome, SW SW NE section 9-15n-1w, was drilling below 4,856 feet this week in the Sylvania formation. No zones of saturation had been encountered in the last 200 feet to warrant testing. Operators are as interested in testing the Sylvania for formations and data as encountering a commercial zone. Valuable data of the area for future deep testing in Michigan is sought.

Ogemaw County

West Branch Township: Weber Oil Co. No. 3 Wilcox, SE SE NE section 34-22n-2e, completed a 50-bbl. acidized producer this week. The Weber company has nine other tests active or located for drilling in various sections of the township.

Edwards Township: Only active test in Edwards was completed dry this week at Robert W. Atha No. 1 Crow, SE SW SW section 4-21n-1e.

Clare County

Freeman Township: S. J. Higelmire's potent discovery in section 3, which brought Clare County its first commercial oil producer recently, was acidized this week and responded with a gauge of more than 900 bbls. daily. Opening runs were reported at 50 bbls. an hour for 24 hours. Meanwhile confirmation tests to prove the area were progressing. Gulf Refining Co. was drilling below 1,600 feet, using a rotary drill to speed work in the early stages, and will later shift to standard equipment. The Gulf test is an east offset to the discovery. One test which is being closely watched, 2 miles north of the Clare discovery, is Pure Oil Co. No. 1 Switzer in section 27, Redding Township. It is an important outpost in the sector, and early reports on formations were favorable. Development in the Clare area has been somewhat slower than the play which boomed Overisel Township, Allegan County, discovered two weeks after the Clare strike.

Ottawa County

Zeeland Township: Fortney Oil Co. No. 1 Van-Zoeren, SE SE SE section 10-5n-14w, failed as a commercial producer.

Isabella County

Wise Township: Commercial production was indicated from the Dundee limestone with a favorable showing at Turner Petroleum Co. No. 1 White, SE NE NW section 28-16n-3w, where about 25 bbls. daily is being swabbed, and acid treatment is planned. The test indicates a possible new pool, four miles east of the Vernon field. A show was logged in the Traverse formation but drilling was continued to the Dundee. Top of the Dundee was logged 3,633 feet, and pay zone was tapped at 3,703-12 feet. Water began to cut in from the lower level and the test was plugged back in preparation for treatment. It is the first indicated commercial production in the township, a dry test having been completed recently in section 5. Exploration of the southern part of Wise Township was indicated by the favorable showing.

MICHIGAN DAILY CRUDE OIL RUNS

Daily Average for July, 1938

Pool—	Wells	Runs
Porter-Yost	410	7,347
Greendale-Chippewa	236	1,813
Geneva-Midland	3	20
Fremont-Isabella	1	15
Sherman-Isabella	68	2,746
Vernon-Leaton-Denver	90	1,068
Freeman-Clare	1	123
Beaverton	23	244
Bentley-Gladwin	24	733
Buckeye-Wicklund-Oard	418	19,472
Ogemaw	224	3,336
Adams-Arenac	8	131
Clayton-Arenac	50	3,906
Secord-Gladwin	2	26
Tuscola	1	0
Saginaw-Hemlock	57	83
Birch Run	25	49
Dundee-Monroe	3	19
Edenville	24	2,749
Montcalm County	63	728
Allegan County	123	4,184
Muskegon	87	136
Total	1,941	48,928

Y.P.F. Purchases Itaca Company, Argentine's Third Largest

Yacimentos Petroliferos Fiscales, Argentina government oil company, has purchased properties of "Itaca" Compania Argentina Para la Elaboracion de Productos Petroliferos, S.A., third largest marketing company in that South American country.

A large share interest in "Itaca" was formerly owned by "Astra" Compania Argentina de Petroles Sociedad Anonina which is a producer and refiner operating a plant with crude capacity of 3,650 bbls. per day and cracking facilities for handling 1,000 bbls. per day.

Dispatches from Argentina did not disclose whether the government company acquired any interest in "Astra" or whether the purchase was confined entirely to the shares of "Itaca."

North Louisiana, Arkansas

By GEORGE WEBER

New Test of Oil Possibilities on the Logansport Structure

SHREVEPORT, La., Aug. 15.—The Shreveport field discovery well is soon to have a pipe line outlet, as Atlas Pipe Line Corp. began survey last week for a line from its refinery nearby to the well site. R. E. Allison No. 1 Ellerbe, discovery well near the spillway on Cross Lake, 1 mile northwest of the city limits, has been shut in since July 15 because of no outlet. Before being shut in it gauged 500 bbls. daily through one-half inch choke, gravity 43.8. It has been estimated good for 5,000 bbls. daily or more on open flow. A tentative allowable of 500 bbls. daily has been set.

Only one other request for a drilling permit has been filed with the Conservation Department, but it has been delayed pending decision on spacing pattern. Tests are being planned in all directions, in and outside the city limits. Strong civic pressure is being brought to bear to insure close spacing in the new field—in opposition to the previous requests for a uniform 40-acre pattern, town meetings tentatively approve a 10-acre pattern outside the city limits, and town lot drilling within.

Ohio Oil Co. is leasing west of the Haynesville field into Webster Parish, and rumors persist that a deep test will be drilled on the flanks of that old producing pool in search of lower Trinity production, such as has been developed at Cotton Valley.

Estimated Production

Estimated daily gross production all companies week ending August 12:

NORTH LOUISIANA

	Bbls.
Bellevue	650
Caddo light	4,195
Caddo heavy	2,480
Converse	560
Cotton Valley heavy	95
Cotton Valley light	*12,025
De Soto and Red River	1,380
Elm Grove	340
Haynesville	3,215
Holly	75
Homer	2,610
Lisbon	10,250
Pleasant Hill	100
Rodessa	36,285
Sarepta-Carterville	†520
Sligo	1,655
Sugar Creek	325
Urania	2,765
Zwolle	2,700
Total Louisiana	82,225

SOUTH ARKANSAS

Buckner	1,415
Champagnolle	1,085
El Dorado	1,845
Lisbon	270
Miller County	375
Nevada	640
Rodessa	6,715
Schuler	22,110
Smackover light	2,075
Smackover heavy	16,080
Stephens	550
Troy	1,200
Urbana	1,190
Village	225
Total South Arkansas	55,775

Texas side of Rodessa field 31,415 bbls. daily.

*4,250 bbls. is distillate. †235 bbls. is distillate.

Logansport Area

A new test of the oil possibilities on the northeast flank of the Logansport gas-distillate structure has been staked by Potter and Rubeling at No. 1 Smith, SW SE NW section 6-12-15. It is about 2 miles northeast of Hunter Co. No. 1 Parker completed in the lower Glen Rose several months ago. The Hunter Co. is also contemplating another test in the area on short term leases in sections 18 or 24-12-16.

In the Blue Lake area of Sabine Parish, 1½ miles south of the recent deep pay discovery, Albert Reich and others No. 1 Glaque, section 27-7-14, has been shut down at 4,517 feet without having encountered promising saturation.

Nearby on the east side of the shallow Converse field, Sabine Parish, W. L. McClanahan No. 1 Frost, section 22-9-13, is plugging back from its original depth of 5,525 feet. Test is to be made of showings logged from 3,028-50 feet, at the contact point of the upper and lower Cretaceous.

ARKANSAS

The status of the two wells at critical depths in the Village field of Columbia County was practically unchanged during the week. Fohs Oil Co. No. 1 Phillips, southwest offset to the discovery well, has been shut down for orders after two unsuccessful attempts at squeeze jobs made to shut off bottom water, total depth 7,424 feet. As a north offset to this test, and a west offset to the discovery well, Standard Oil Co. No. 1 Crumpler has reported saturation, and casing is being set at 7,485 feet, total depth 7,500 feet.

In Dallas County, Arkansas, 4 miles northwest of Fordyce, J. T. Marwick and others are starting a 3,500-foot wildcat operation on their 6,000-acre block around section 20-10-13.

Samuel S. Alexander, Forth Worth independent, is curing titles on a block of approximately 12,000 acres centering around section 6-11-14, Calhoun County, about 5 miles northeast of Bearden.

TEXAS BORDER COUNTIES

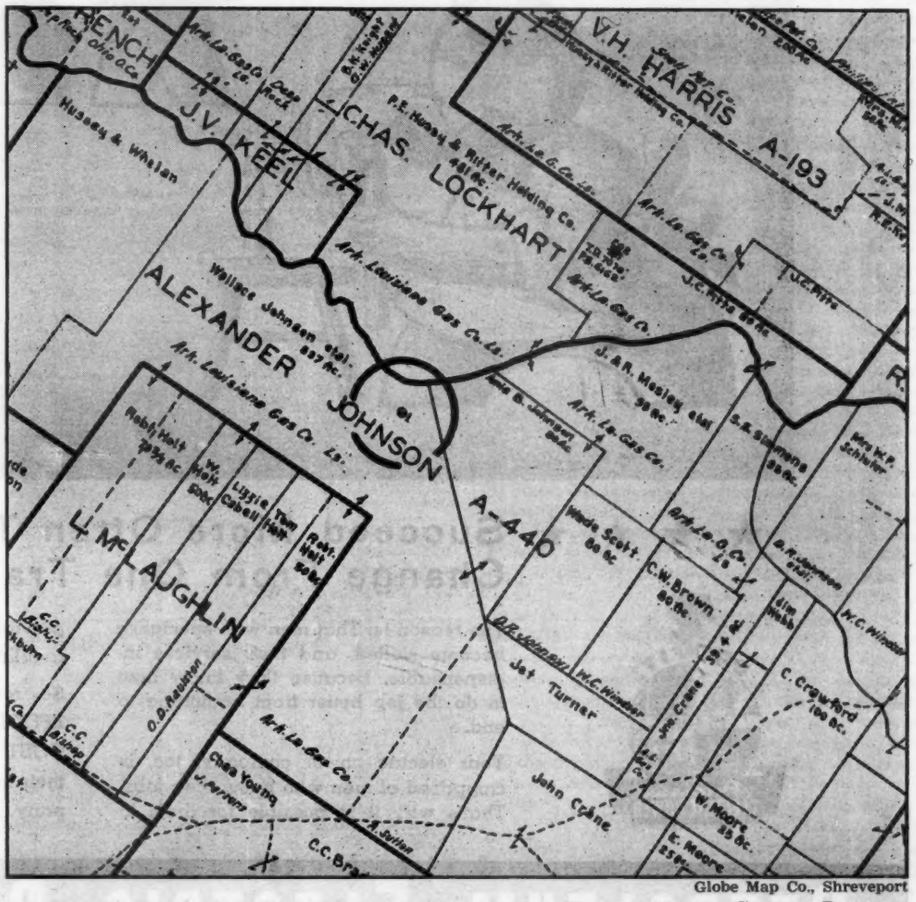
Marion County

Arkansas Fuel Oil Co. No. 1 Johnson, Alexander Johnson Survey, about 1 mile west of the Jefferson section of the Rodessa field trend, has perforated casing in attractive zones of the lower Glen Rose, and was making drill stem tests as the week closed. A successful completion here would throw much intermediate territory along the Rodessa fault system open to exploration.

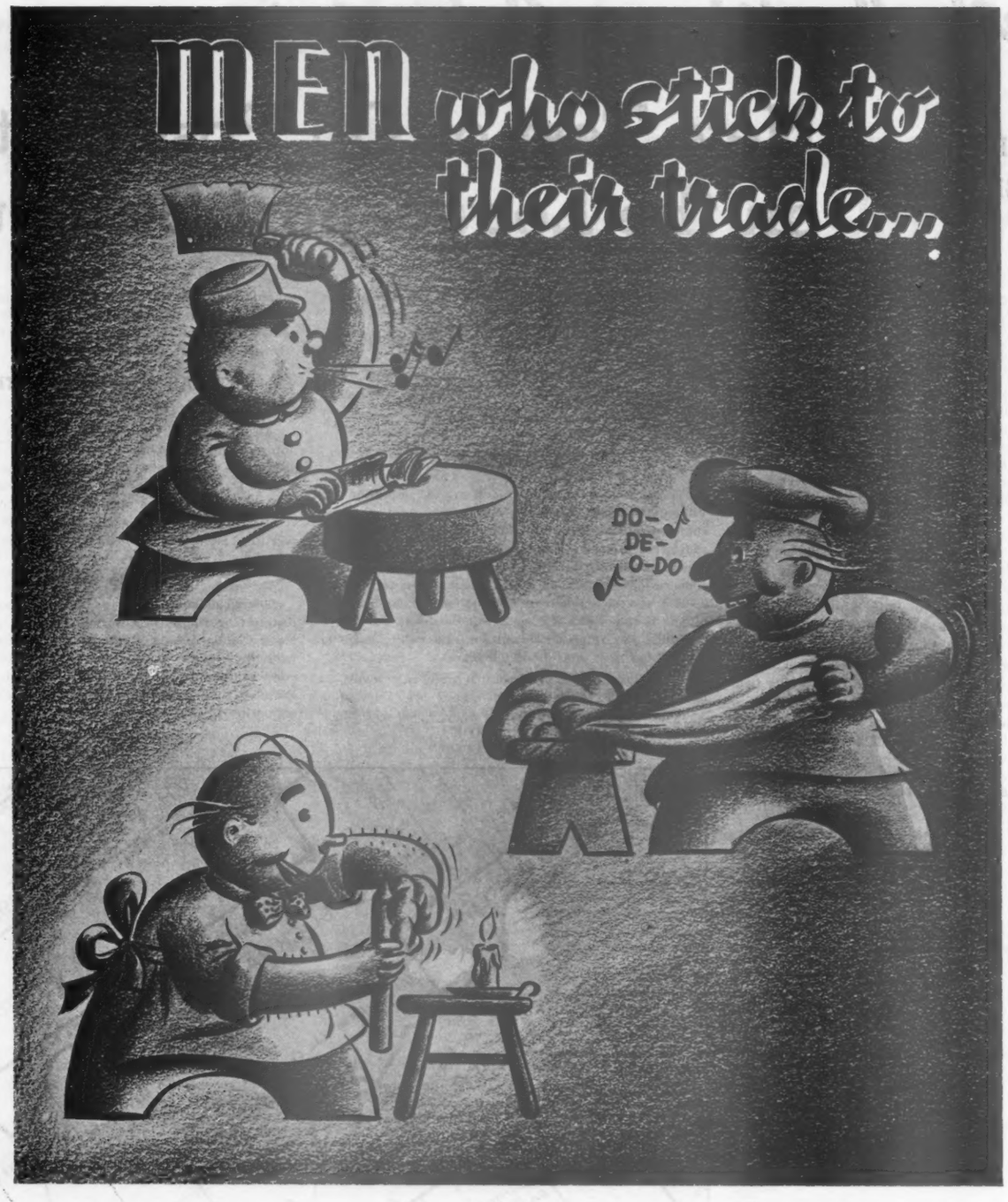
Panola County

The 10,000-foot mark was again reached by another test on the flanks of the Sabine uplift, as Texas Co. No. 1 Claude Adams, T. Cox Survey of Panola County, near the Bethany area, drilled below 10,022 feet at the close of the week. The well is now projected to the Permian lime zone, known to exist as a deep blanket formation in that area.

(Continued on Page 114)



Arkansas-Louisiana Gas Co. No. 1 Johnson, Johnson Survey, Marion County, Texas, is an important southwest outpost to the Jefferson sector of Marion County, Rodessa. The well is southwest of the same operator's No. 1 Pitts, completed as a gas well in the Hill zone



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West, Central and Panhandle Texas

By
D. H. STORMONT

Yoakum County Extensions Are the Center of Attraction

FORT WORTH, Tex., Aug. 15.—Several important field extensions and the staking of three new wildcat locations in the North and Central Basin areas were reported in West Texas while activity in West Central Texas showed a slight decline with only wildcats and field extension wells gaining recognition.

North Basin Area

Yoakum County was the center of most of the activity with extensions being made to the Wasson-Denver field, the Roberts area and the one-well Walker pool. Mile and a half west of the nearest producer in the Wasson-Denver area, Gulf Oil Corp. No. 1 L. Moore, Block 897, started heading oil while drilling below 5,043 feet. The Gulf outpost is 1½ west of Continental Oil Co. and Helmerich & Payne No. 1 Dowell, 1¼ miles west extension which was completed several weeks ago. The new outpost encountered slight porosity and saturation from 4,990 feet to 5,003 feet and showed a considerable increase in drilling to its present total depth. Operators plan to drill about 50 feet deeper before making any actual production attempts.

A quarter mile west extension to the Roberts area of southwestern Yoakum County was assured when Shell Petroleum Corp. No. 3 Dora Roberts, section 793, flowed 85 bbls. of oil in five hours through 2-inch tubing landed at 5,155 feet, 1 foot off bottom. The well is about three-quarters of a mile northwest of No. 1 Roberts, discovery well, which gauged 566 bbls. per hour.

Texas Co. No. 1 Randall, section 835, seeking a quarter-mile south extension to the one-well Walker area of southwestern Yoakum County, swabbed at the rate of one-quarter barrel of oil per hour at total depth of 4,902 feet. Operators are preparing to shoot the well before another gauge is taken.

Yoakum County's closely watched wildcat drilled by Ralph H. Gill in the Dixon lands, 2½ miles northwest of the Bennett pool, encountered sulfur water from 5,446 feet to 5,505 feet, total depth. Operators first planned to abandon it but have decided to carry the hole deeper in search of another possible pay level. H. K. Riddle gave Yoakum County a new wildcat when he spudded in No. 1 Barrier in section 6. The test is about 11 miles northwest of the Bennett pool and was drilling below 100 feet as the week closed.

Atlantic Refining Co. has staked a new wildcat about 2½ miles northwest of the Seminole field of Gaines County. It will be No. 1 A. J. and J. Parker and will be in section 264, G.W.T. Survey. Martin County's important wildcat, W. D. Anderson No. 1 J. R. Vance, section 9, Block 36, T.&P. Survey, north of Stanton, was abandoned at 4,003 feet after finding water at that depth.

Central and South Basin Area

Ector County's important wildcat, Sinclair Prairie No. 3-A Johnson, in section 37, Block 43, T.&P. Survey, between the North Cowden pool and the Foster pool, which has been indicating production from a horizon that showed water in other tests drilled in the area, was drilling below 4,570 feet with 500 feet of oil in the hole believed to be coming from 4,467-71 feet. Ector County got a new wildcat location when Fields and others staked No. 1 Owenwood, in section 6, Block 44, T.&P. Survey, 3¼ miles northwest of the Harper pool. The test is contracted to go to 4,500 feet and materials will be moved in within a few days. Several major companies hold considerable acreage around the wildcat and it promises to be a closely watched test.

A mile and a quarter northwest extension to the pool opened recently on University of Texas Lands in eastern Crane County, which already has been given a 1¼-mile southeast spread, appeared when Texas Co. No. 1-G State, filled with 150 feet of oil in 12 hours. The prospective producer encountered a slight show of oil at 3,185 feet, from which the hole is believed to be filling. Drilling continues below 3,210 feet in lime.

WEST CENTRAL TEXAS

A drilling program for the newly discovered deep oil pool in Stephens County was announced by G. W. Rich, who opened the field. Three new tests were staked and drilling operations are to start this week. Nearest the discovery well will be Rich No. 2 Andrews, in section 39-7, T.&P. Survey, a quarter mile east of the No. 1. The other two tests are in section 37, No. 1 Castleman being in Lot 2 while No. 1 Pruett is in Lot 3. Rich No. 1 Andrews, the discovery well, gauged 100 bbls. per day from a total depth of 3,685 feet.

Possibilities of opening a second deep pay horizon in Shackelford County's Ivy pool were seen when J. G. Hammond No. 1 Mansker began drilling into saturated Strawn sand topped at 4,146 feet. The test missed the regular 3,200-foot pay of the pool and was drilled deeper to test the Strawn horizon. Operators plan to drill a few more feet of pay and then test the showing. Some water is being bailed, but it is believed to be coming from the upper part of the hole.

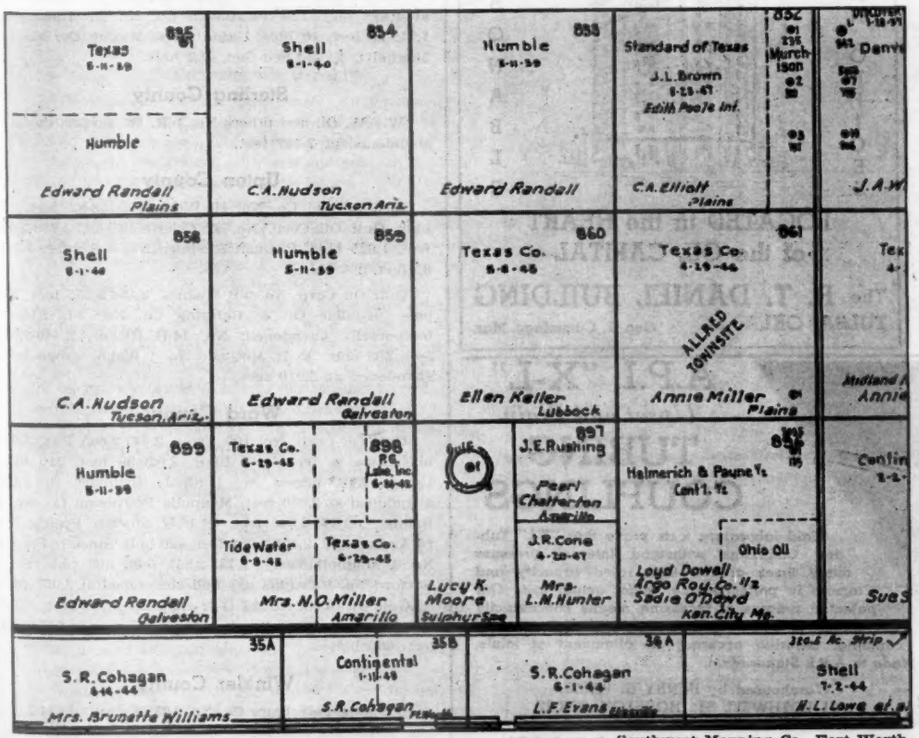
One of West Central Texas most closely watched wildcats, Jones & Stasney No. 1 C. T. Brockman, section 95, C.I.R. Survey, in the southwestern part of the county, which has for several weeks been hailed as a new pool opener from the deep Strawn level, was deepened 3 feet and is bottomed at 4,711 feet with saturation encountered from 4,703 feet to total depth. The well has been shut in for several weeks while operators underreamed the 5 3/16-inch casing to the top of the sand. The test has been estimated for 200 to 300 bbls. per day on the basis of several short flows.

Young County's important wildcat drilled by Union Production Co. in the Corley-Ramsey lands, 3 miles southeast of Graham, is plugged back from a total depth of 4,300 feet to test the Caddo lime at about 3,937 feet. The test has been in the testing stages for several weeks. It was first acidized at 3,877 feet where it showed for a commercial producer and was called a new pool opener. Production later fell below 40 bbls. per day and the test was deepened to 4,300 feet where no shows of oil or gas were found. The Caddo lime carried a show of both oil and gas while drilling through it. Young County received a new wildcat when Young Brazos Oil Co. started moving in materials for No. 1 H. J. Wray, 3 miles southeast of Newcastle and in the Alexander McLennan Survey.

Wallace & Vickers spudded their wildcat test in Hamilton County and it is now drilling past 300 feet. It is the No. 1 Lung, in the P. J. Bailey tract, 10 miles west of the town of Hamilton. Contract depth is 85 feet into the Ellenburger of Lower Ordovician, which is expected at about 3,000 feet.

PANHANDLE AREA

Several wildcat tests in the Panhandle area are drawing much attention as drilling continues. Sinclair Prairie No. 1 Bush, deep wildcat northwest of Amarillo, is drilling below 2,981 feet. It is in section 23, Block 6, B.S.&F. Survey, Potter County, and is the first deep test to be drilled outside of the large gas area. Contract depth of the well is 8,500 feet. Bond Jones and others No. 1 Foard Estate, Dickens County wildcat, is drilling ahead below 1,900 feet. Aggers and others No. 1 Loter-



Southwest Mapping Co., Fort Worth

Gulf Oil Corp. No. 1 L. K. Moore extended the Denver area of the Wasson-Denver pool of Gaines and Yoakum counties 1½ miles west of production which is, itself, a mile extension from the field proper

Valves

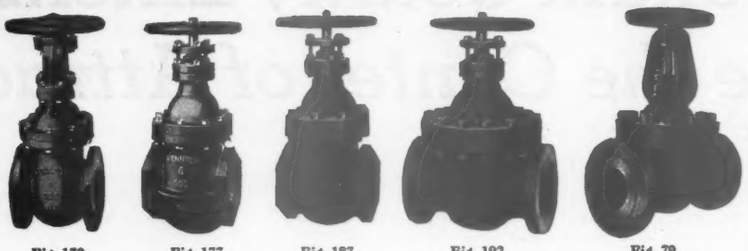


Fig. 170 400-lb. Test | Fig. 177 1000-lb. Test | Fig. 187 700-lb. Test | Fig. 192 1600-lb. Test | Fig. 79 2500-lb. Test

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Schluter in section 422, Block H, W.&N.W. Survey, Childress County, topped the Big lime at 4,792 feet and is drilling below 5,200 feet with no shows yet reported.

WEST TEXAS FIELD COMPLETIONS

Andrews County

Fuhrman Petroleum No. 11 Ford, 4,215-4,455 feet, 1,400 bbls. Humble Oil & Refining Co. No. 47 Means, 4,380-4,510 feet, 5,430 bbls.

Ector County

J. D. Bodkins No. 1 F. A. Henderson, abandoned location. Cities Service No. 6-C Cummins, 4,100-4,268 feet, 974 bbls. Lee Drilling Co. No. 6 T. & P. Land Tracts, 4,008-4,175 feet, 3,208 bbls. Shell Petroleum Corp. No. 5 Slator, 4,220-84 feet, 168 bbls. Shell Petroleum Corp. No. 2-A Witcher, 3,995-4,176 feet, 859 bbls. Stanolind Oil & Gas Co. No. 12-B Cowden, 3,993-4,159 feet, 1,134 bbls. Stanolind No. 3 Witcher, 4,035-4,173 feet, 141 bbls. Lou Stogner No. 1 Hendricks, dry and abandoned at 4,329 feet. L. H. Wentz No. 6 Paul Moss, 4,030-4,130 feet, 2,455 bbls.

Gaines County

Carter-Continental No. 3-44 Moore-Langdon, 4,950-85 feet, 603 bbls.

Howard County

Magnolia Petroleum Co. No. 6 A. E. O'Daniels 2,620-2,800 feet, 494 bbls. Moore Brothers No. 3-A O'Daniels, 2,605-2,800 feet, 527 bbls. Moore Brothers No. 8-A T. & P. Land Tracts, 2,620-2,785 feet, 733 bbls. Loving No. 1 T. & P. Land Tracts, junked and abandoned at 3,705 feet.

Magnolia Petroleum Co. No. 1 Price-Scott, 2,651-2,859 feet, 1,307 bbls. Merrich & Lamb No. 9 Otis Chalk, 3,090-3,200 feet, 25 bbls. Sinclair Prairie No. 58 Dodge, 2,540-2,790 feet, 303 bbls. Standard of Texas No. 12 Dodge, 2,560-2,791 feet, 152 bbls.

Martin County

W. D. Anderson No. 1 J. R. Vance, dry and abandoned at 4,005 feet.

Menard County

Hartzell-Nown-O'Hara No. 1 Wilhelm, abandoned at 655 feet.

Pecos County

Arnold No. 4 Scharff-Blackmon, dry and abandoned at 1,856 feet. Lee Petroleum Co. No. 20 University, 1,719-29 feet, 10 bbls. Union Oil & Mining Co. No. 1-D Magnolia, 1,773-1,866 feet, 332 bbls.

Sterling County

W.F.W. Oil and others No. 1 R. W. Foster, dry and abandoned at 2,447 feet.

Upton County

Cardinal Oil Co. No. 16 Wooley, 2,138-83 feet, 130 bbls. Gulf Oil Corp. No. 32 Crier-McElroy, 2,750-2,954 feet, 1,625 bbls. Pittman & Simco No. 1 Sanger, 2,237-85 feet, 693 bbls.

Gulf Oil Corp. No. 9-B Hughes, 2,156-2,255 feet, 228 bbls. Humble Oil & Refining Co. No. 9-B Ricker, temporarily abandoned; No. 14-B Ricker, 2,440-2,520 feet, 363 bbls. E. R. McQuaid No. 1 Webb, temporarily abandoned at 3,210 feet.

Ward County

Gulf Oil Corp. No. 100 Estes, 2,447-2,665 feet, 3,048 bbls. Luse & Ice No. 2 Blair, 2,020-96 feet, 210 bbls. Lyman & Childress No. 1 Skelly Brillhart, dry and abandoned at 2,950 feet. Magnolia Petroleum Co. No. 2 Brillhart, 2,375-2,826 feet, 48 bbls. Sinclair Prairie No. 13 Archenhold, 2,435-2,988 feet, 420 bbls. Sinclair Prairie No. 1 Magnolia-Sealy, 2,733-2,851 feet, 305 bbls. S. J. Rixford No. 1 Crump, dry and abandoned at 3,057 feet.

Gulf Oil Corp. No. 97 O'Brien, 2,525-2,775 feet, 1,015 bbls. Western Well Service No. 1 Johnson, 1,947-2,032 feet, 399 bbls.

Winkler County

Magnolia Petroleum Co. No. 165 Walton, 2,824-2,926 feet, 957 bbls.; No. 167 Walton, 2,840-2,935 feet, 1,824 bbls.; No. 14 State-Walton, 3,155-3,250 feet, 736 bbls. W. K. Royalty Co. No. 3-D Walton, 2,930-3,060 feet, 2,115 bbls.

(Continued on Page 99)

Oklahoma Operations

By DAL DALRYMPLE

Fate of Two Central Wildcat Tests Due for Early Decision

Olson Oil Co. and associates No. 1 Vanek, SE SW NE section 4-12-3w, highly touted wildcat south of Britton in Oklahoma County, central part of Oklahoma, failed to flow when tested last Saturday and operators were preparing to deepen. Swabbing continued throughout Saturday but the fluid level remained at 1,500 feet from bottom and the well made some small heads of oil. Gas was estimated at 1,000,000 feet daily. It was estimated a load of 230 bbls. of dead oil had been recovered, with considerable more live oil.

Total depth was 6,749 feet in second Wilcox sand. The swab was run to bottom of the hole repeatedly and there was no salt water showing, although as much as 25 per cent basic sediment and mud was recovered at times. It is estimated by engineers that bottom of the hole was from 10 to 15 feet above salt water level for that part of Oklahoma. Shut-in pressure increased from 600 pounds to 847 pounds during the day. Pressure equipment will be used in deepening, so the well may flow while drilling. It was expected to deepen about 10 feet, after which additional tests would be made early this week.

Another Oklahoma County wildcat also was due for test this week. It was Fain Drilling Co. and others No. 1 Little, SW SW NE section 28-11-3w, southwest of the Oklahoma City field. It had saturated second Wilcox sand at 6,952-88 feet, with casing set at 6,956 feet. Although the sand is checking about 300 feet lower than Wilcox producers in the Oklahoma City field, the wildcat is given a chance to produce.

Another deep test for southwestern Oklahoma will be drilled in the old Chickasha gas field, Grady County. It is Carter Oil Co. and others No. 1 Farrell, C SE SW section 26-5n-8w. It is to be a 10,000-foot test, operators holding mineral rights below 3,500 feet. It is on a community block of 2,372 acres.

Pottawatomie County

Completions of the past week in Pottawatomie County: Alma Oil Co. No. 2 Curley, SE SW NW section 33-7-5, St. Louis area, had dolomite pay at 4,046-74 feet, total depth, was treated with acid and pumped 200 bbls. of oil and 350 bbls. of water in 24 hours.

J. E. Trigg No. 3 Canfield, SW NW SW section 33-7-5, was acidized and swabbed 725 bbls. of oil net in 24 hours from dolomite pay at 4,024-56 feet, total depth.

Magnolia Petroleum Co. No. 3 Tull-fyke A, NW cor. section 28-7-5, found Calvin pay at 2,756-2,808 feet, total depth, and pumped 108 bbls. of oil and 5 bbls. of water in 24 hours.

Darby Petroleum Corp. and Gulf Oil Corp. No. 3 Hamby, NE NW NW section 14-7-4, flowed 252 bbls. of oil in 24 hours from Calvin pay at 3,161-72 feet, total depth. Gravity of the oil was 40.5 degrees.

Magnolia Petroleum Co. No. 3 Magnolia Billington, NE NW SW section 36-7-4, found dolomite at 4,188-4,228 feet, total depth, and pumped 523 bbls. of oil and 1,400 bbls. of water in 24 hours.

Willie Mae Lain Oil Corp. No. 1 Castleberry, SE SE SW section 36-6-4, Gray pool, was abandoned at 1,120 feet.

Wildcat Completions

Burke-Greis Oil Corp. No. 1-A Knappenburger, SW NW SW section 28-10-7, Seminole County wildcat, topped Calvin sand at 2,380 feet, had broken sands to 2,673 feet, total depth, and was dry and abandoned.

Indian States Oil Co. and others No. 1 Johnson, NE SE NE section 2-6-5, wildcat in Seminole County, was bottomed at 3,004 feet, plugged back to 2,850 feet, perforated casing without result and was abandoned.

Union Development Co. No. 1-A Abbott, SW NW NE section 34-3n-6, wildcat in Pontotoc County, was dry and abandoned at 2,013 feet, total depth.

Pierce & Moran No. 1 Kroeger, SE NE SW section 30-5-7, Pontotoc County wildcat, had Cromwell sand at 2,296 feet and was dry and abandoned at 2,375 feet, total depth.

Chevalier & Simon No. 1 Osage, NW NW SW section 33-27-5, Osage County wildcat, topped Mississippi lime at 3,154 feet, and was dry and abandoned at 3,504 feet, total depth.

Pontotoc County

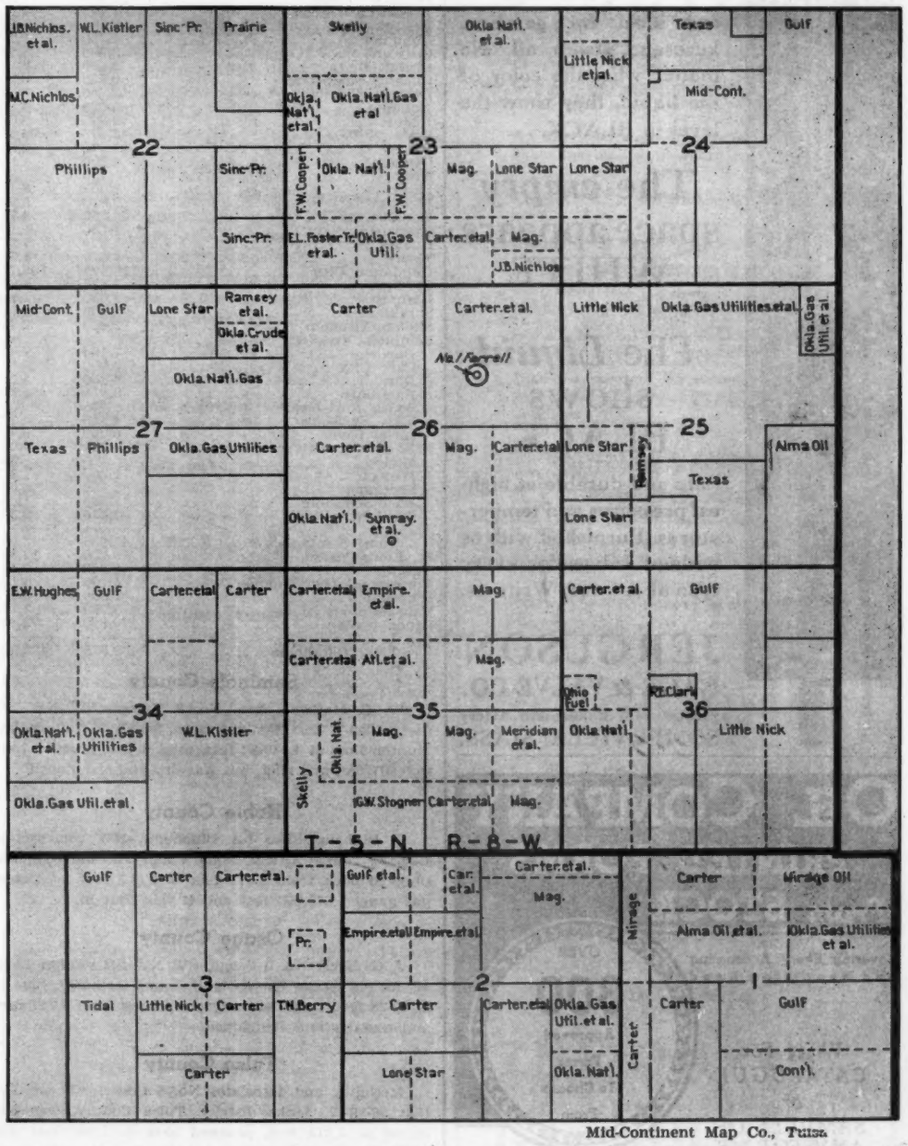
W. B. Osborn No. 2 Jones, SE NW SW section 33-5-8, was completed for an estimated 5,000,000 feet of gas in Gilcrease sand at 2,525-60 feet, total depth.

Sunray Oil Co. No. 6 Shields, NW NE SW section 33-5-8, Allen area, Pontotoc County, had Gilcrease sand at 2,557-68 feet, total depth, was shot and pumped 85 bbls. of oil in 24 hours, initially.

Barbara Oil Co. No. 3 Mount, C N half N half NW section 36-5-7, North Steedman district, had Gilcrease pay at 2,245-62 feet, total depth, and flowed 30 bbls. of oil through choke in 24 hours.

Ledge Oil Co. No. 3 Factor, SW SW NW SE section 25-5-7, had Gilcrease sand at 2,244-52 feet, and was dry and abandoned.

McKoy & Woolley No. 1 Bayne, SE SE SW section 16-5-6, was bottomed at 2,984 feet, plugged back and



Mid-Continent Map Co., Tulsa

Location has been announced for a 10,000-foot test in section 26-5n-8w, in the old Chickasha gas field, Grady County, on a community block. Many gas wells surrounding the location were eliminated on this map for sake of clarity

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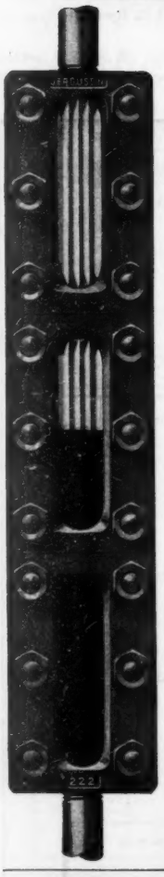

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ripped casing at 1,653-67 feet and produced an estimated 2,000,000 feet of gas.

Sinclair Prairie Oil Co. No. 3 Gordon A, NE SW NE section 21-5-5, had Viola lime at 2,530-2,603 feet, total depth 2,605 feet, was acidized and pumped 20 bbls. of oil net in 24 hours. It swabbed 40 bbls. in 24 hours, naturally.

Superior Oil Co. No. 1 Northam, NW NW NE section 36-5-4, Bebee pool, was bottomed at 2,636 feet and pumped 130 bbls. of oil in 24 hours.

Simpson & Roodhouse No. 2 Illinois, NE NE NW section 28-2n-6, Fitts district, had Cromwell sand at 3,321-51 feet, total depth, was shot and pumped 100 bbls. of oil in 24 hours.

W. A. Delaney No. 4-A Horn, SE NE NE section 22-2n-7, found lower McAllister pay at 1,285-90 feet and 1,307-15 feet, total depth 1,335 feet, and pumped 30 bbls. of oil and 20 bbls. of water in 24 hours.

Westheimer & Neustadt No. 5 Factor, NE SE SW section 25-5-7, Allen district, had Gilcrease sand at 2,231 feet, total depth 2,269 feet, and pumped 22 bbls of oil in 24 hours.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending August 13, and for the preceding week, was as follows:

	Barrels	
	Aug. 13	Aug. 6
Allen	5,750	5,550
Billings	4,250	4,350
Burbank	7,250	7,150
South Burbank	9,950	9,825
Balance Osage	17,500	17,000
Blackwell district	4,175	4,200
Bristow-Slick	8,800	6,500
Chandler	1,750	1,775
Crescent	3,500	3,250
Cromwell	3,150	3,175
Cushing-Shamrock	9,750	9,500
Duncan district	3,650	3,425
Edmond	5,025	4,850
Fish	2,675	3,025
Fitts	42,275	38,500
Jesse	1,975	2,550
Graham	4,200	4,150
Gray	725	825
Healdton	8,050	8,100
Hewitt	3,975	3,925
Keokuk	4,300	3,775
Konawa	1,150	1,100
Lucien	7,375	7,375
Moore	4,675	4,750
Oklahoma City	116,475	106,775
Olympic	5,175	4,775
Ramsey	1,650	1,425
Sasakwa	1,100	1,125
Sholem-Alechem	2,425	2,400
Seminole district:		
Bowlegs	7,100	7,475
Carr City	3,000	3,125
Dora	4,350	5,250
Earlsboro	3,875	4,150
South Earlsboro	475	350
East Earlsboro	4,750	4,275
Little River	6,250	6,400
East Little River	800	750
Maud	525	550
Mission	1,300	1,275
Seminole	6,500	6,550
East Seminole	1,535	1,450
Searight	2,375	2,350
Total Seminole	42,835	43,950
St. Louis-Pearson	19,750	17,875
Tatums	3,250	3,175
Tonkawa-Garber-Thomas	4,100	4,125
Wewoka	2,250	2,025
Yale-Jennings	3,700	3,725
Other pools	70,990	72,890
Total Oklahoma	439,575	422,900

Seminole County

W. C. McBride, Inc., No. 3 Hulsee, SW NW SW section 8-9-7, East Seminole area, Seminole County, had Hunton lime at 4,140-83 feet, total depth, plugged back to 3,607 feet and shot, but was dry and abandoned.

Noble County

J. Blubaugh No. 1-A Blubaugh, NW cor. section 1-24-1w, Tonkawa field, Noble County, an old well, was plugged back from 2,571 feet to 2,512 feet, was shot, gas gauged 675,000 feet and it was shut in.

Osage County

J. G. Neely No. 2 Osage, SW NW SE section 18-22-12, an old Osage County well, found Arbuckle lime at 2,120-28 feet, total depth, on deepening from 1,717 feet, and was dry and abandoned.

Tulsa County

McNalley and associates No. 5 Cosar, NE cor. section 36-18-12, Jenks district, Tulsa County, was bottomed at 1,315 feet, plugged back to 1,040 feet and shot, but was dry and abandoned.

Wagoner County

B. G. Gable No. 1 McKay, NE NW SW section 15-16-15, Stone Bluff area, Wagoner County, was dry and abandoned at 1,363 feet, total depth.

Knox-Shouse No. 2 Kenworthy, NE NW NE section 3-16-15, had sand at 991-998 feet, total depth 1,050 feet, and pumped 3 bbls. of oil daily.

Okmulgee County

W. H. Brecht No. 6 Colbert, SE SE NW section 16-14-14, an old Okmulgee County well, was deepened from 815 feet to Booch sand at 1,194-1,206 feet, total depth 1,215 feet, was shot and pumped 2 bbls. of oil daily.

Snyder-Swan Oil Co. No. 1 Wooley, SE SE SW section 21-15-12, Beggs district, had Wilcox sand at 2,704 feet, the hole filled with water and it was abandoned at 2,709 feet.

Okfuskee County

O. W. Moffett No. 1-B Stone, NW NE NW section 32-11-11, Okfusgee County, was dry and abandoned at 2,601 feet, total depth.

Carter County

Ben G. Barnett, Inc., No. 2-A Hooks, NE NW SW section 14-1s-3w, Carter County, was bottomed at 2,579 feet, and was completed for a 40-bbl. pumper, producing from Deese pay. Gravity of the oil was 24 degrees.

Gulf Oil Corp. No. 1 Johnson A, C SE NW section 27-2s-3w, deep test in the Fox field, flowed 1,084 bbls. of oil through open casing in six hours and 45 minutes, and then flowed 1,072 bbls. of oil through three-eighths inch top-hole choke in 24 hours. Gravity of the oil was 42 degrees. It had oolitic lime pay at 7,786-7,868 feet, total depth. It had bottom hole pressure of 2,514 pounds. with bottom hole temperature of 146 degrees. It was acidized with 5,000 gallons. Work started at this well February 2, 1938.

Garvin County

Cox & Hamon No. 2 Pate, SW SE SW section 29-1n-3w, Tussy pool, Garvin County, had Deese sands beginning at 1,930 feet, total depth 2,333 feet, and flowed 125 bbls. of oil through tubing in 24 hours.

Same operators' No. 3 Pate, SE SW SW section 29-1n-3w, was an abandoned location.

Latimer County

LeFlore County Gas & Electric Co. No. 26 Orr, NE SE SE section 1-6-22, Latimer County, topped Hartshorne sand at 1,959 feet, total depth 2,143 feet, and produced 8,000,000 feet of gas daily.

Haskell County

Utilities Gas Production Corp. No. 2 Johnson, C NE SE section 27-8-20, Kinta area, Haskell County, was completed for 700,000 feet of gas daily in sand at 735-742 feet, total depth.

Caddo County

Magnolia Petroleum Co. No. 4 Edwards, SW SE SW section 25-6-10w, Cement field, Caddo County, had Deese sand at 4,417-41 feet, total depth 4,443 feet, and pumped 211 bbls. of oil in 16 hours, initially.

Ray Stephens, Inc., No. 2 Thompson, SE SE NW section 27-6-10w, found Deese pay zone at 4,816-51 feet, total depth, and flowed 100 bbls. of oil in 24 hours on gas lift.

Magnolia Petroleum Co. No. 5 Niles, NE NE NW NW section 36-6-10w, an old Cement well, was deepened from 2,465 feet to 3,387 feet, and pumped 23 bbls. of oil from pay at 3,360-87 feet, recompleted.

Stephens County

Louis Sikes No. 7 Mulkey, SE NW NE section 16-1s-8w, Stephens County, had Pontotoc sand at 2,136-40 feet, total depth, and pumped 20 bbls. of oil in 24 hours, initially.

Carl Kiester No. 1 Jones, SW SW NW SE section 23-1s-5w, Velma pool, had Pontotoc sand at 373-410 feet, total depth, and produced 275,000 feet of gas.

Comanche County

Wichita Oil, Inc., No. 7 Pope, NE NE SW section 28-2n-10w, Comanche County, was completed as a 4-bbl. pumper from Pontotoc sand at 444-458 feet, total depth.

Joe S. Fruitt No. 8 fee, SW SE section 26-2n-11w, Lawton pool, had pay at 323-352 feet, total depth 358 feet, and pumped 5 bbls. of oil daily.

New Operations

The following new work in Oklahoma was reported:

Kay County: Louis P. Blosser No. 1 Rudolph, NE NE SW section 27-29-1w, wildcat northwest of Dilworth, shut down for repairs at 3,086 feet.

Lincoln County: Oklahoma-Texas Drilling Co. No. 1 Black, SE cor. section 31-16-6, wildcat north of the Skellyville pool, shut down at 874 feet.

Noble County: Community Oil Co. and others No. 1 Hay, SE SE SW section 33-21-2w, wildcat east of North Lucien pool, an old wildcat, rigging up rotary.

Oklahoma County: S. L. Clum and others No. 1 Hawkins, SW SW NW section 15-12-3w, Oklahoma City pool, location.

Pontotoc County: W. B. Osborn and others No. 3 Jones, SW NW SW section 33-5-8, Allen area, drilling at 1,490 feet; Sunray Oil Co. No. 3 Shields, SW SE NE section 33-5-8, building rig; J. L. Casey and others No. 1 Barnett, SW NW SW section 7-5-5, rig; Johnson & Casey No. 1-A Norman, SE SW SE section 12-5-4, rig; Lake Oil Co. No. 6 Gray B, SW SE SW section 25-5-4, digging pits.

Seminole County: Atlantic Refining Co. and Texas Co. No. 1 Howell, NE SW NW section 22-6-6, Traugh pool, location; Rogers & Rogers No. 1 Fisher, C W half E half SW SW section 25-7-5, Hazel pool, location; J. F. Smith No. 4 Harryman A, SW cor. section 33-7-6, Dora pool, moving in rig.

Pottawatomie County: Magnolia Petroleum Co. No. 2 Tull-fyke A, SE SE NW section 20-7-5, St. Louis district, rigging up rotary; Indian Territory Illuminating Oil Co. No. 3 Weems, SW cor. section 21-7-5, rig corners; Hall & Briscoe No. 3 Coleman, NE NW NW section 33-7-5, cellar and pits.

Coal County: Barry and others No. 1-A Schmelzer, NE SW NE section 35-1n-8, drilling below 965 feet.

Latimer County: LeFlore County Oil & Gas Co. No. 27 Orr, SE NW NW NE section 12-6-22, location.

Muskogee County: D. W. Howard and others No. 2 Jessie Howard, NW NW SW section 33-15-15, location.

Tillman County: Indian Territory Illuminating Oil Co. No. 3 Dickey, SE SE NW section 1-3s-19w, Frederick pool, pits.

Comanche County: Wichita Oils, Inc., No. 7 Noble, SW SE SE NW section 28-2n-10w, Lawton pool, drilling below 155 feet.

Carter County: Shell Petroleum Corp. No. 23 Horton, NW NW SE section 6-4s-3w, Healdton pool, pits.

Caddo County: Magnolia Petroleum Co. No. 4 Niles-Hopkins, NW NE NW section 36-6-10w, Cement field, building derrick to deepen an old well.

Jefferson County: Palmer & Palmer No. 5 Grayson, SW NW SE SW section 19-6s-5w, Oscar-Seay pool, rigging up rotary.

Stephens County: A. B. Minnich No. 1-A Stafford, SW SE NE SW section 4-3s-5w, Loco pool, drilling below 410 feet.

Southwest Texas Fields

(Continued from Page 79)

No. 1 Henry continues to core broken sections of sand, carrying oil and gas odors. Sand with an oil odor was cored at 4,934-37 feet, salt water sand at 4,937-40 feet, sand with no show from 5,097-5,100 feet, sand with a gas odor at 5,102-13 feet and sand with a salty taste at 5,113-22 feet. The hole is being cored ahead.

In the Balcones Fault line district, Humble Oil & Refining Co. is moving in material for a projected Edwards lime test in Frio County. The well is on the C. C. Schley lease in the Joseph Travalder Survey 174, about 6 miles east of the wildcat test of Smith Drilling Co. No. 1 San Antonio Joint Stock Land Bank, which is coring for the Navarro formation that showed evidence of commercial production in a recent dry hole at approximately 3,700 feet.

COMPLETED WELLS

Caldwell County

Branyon field: Coffield & Robinson No. 4 Young, 2,347 feet, 20 bbls., pumping. Lincoln Petroleum Co. No. 11 Calliham, 2,333 feet, 40 bbls., pumping. Martel Petroleum Co. No. 12-E Young, 2,343 feet, 71 bbls., 12 hours, pumping. Dale field: Taylor Refining Co. No. 3 Mierars, 2,824 feet, abandoned.

Duval County

Seven Sisters field: Reynosa Oil Co. No. 6-A Garza, 2,655 feet, 14 bbls. per hour, 9/16-inch choke. Casa Blanca field: Magnolia Petroleum Co. No. 5 Duval County Ranch Co., 1,197 feet, 94 bbls., one-half inch choke. J. R. B. Moore No. 2 Martin, 1,206 feet, 120 bbls., pumping. Charamousca field: N. V. Duncan No. 21 Worden, 1,079 feet, 30 bbls., pumping. Eagle Hill field: W. E. Butler No. 1 Foster, sand 1,526-30 feet, 40 bbls., six hours, pumping. Magnolia Petroleum Co. No. 3 Duval County Ranch Co., 1,508 feet, gas well. Hoffman field: Magnolia Petroleum Co. No. 8 Well, 2,796 feet, 10 bbls., one-half inch choke. Cox & Hamon No. 2 Conway, perforated casing 2,855-85 feet, 35 bbls., jetting. Cox, Hamon & Gorman No. 9 Cuellar Brothers, perforated casing 2,827-36 feet, 110 bbls., one-half inch choke. Cox, Hamon & Gorman No. 6 Cuellar Brothers, 2,843 feet, 90 bbls., one-half inch choke. Lundell field: Humble Oil & Refining Co. No. 51 White, 1,539 feet, 24 bbls., 14 hours, 3/16-inch choke.

Jim Wells County

South Alice field: Pitkin & Goldston No. 1 Lindsay and Reed 5,353 feet, 152 bbls., one-eighth inch choke. W. G. Coates No. 2 Stillwell, perforated casing 5,250-62 feet, 110 bbls., one-eighth inch choke.

Live Oak County

Oakville field: Simmons Oil Co. No. 1 Rosebrork, 3,005 feet, abandoned.

McMullen County

Loma Alto field: V. G. Schimmel No. 6 Hagist, 2,297 feet, abandoned.

Milam County

Rockdale field: Central Oil Co. No. 17 Smith, 619 feet, 6 bbls., pumping W. A. Jones No. 3-A Kemp, 705 feet, abandoned.

Nueces County

Luby field: Ohio Oil Co. No. 3 Shaeffer, perforated casing 5,052-56 feet, 135 bbls., one-eighth inch choke. Seaboard Oil Corp. No. 30 Luby, perforated casing 4,345-49 feet, 119 bbls., one-eighth inch choke. Stanolind Oil & Gas Co. No. 13 Spessard, 5,082 feet, abandoned. Saxet field: Houston Oil Co. No. 14 McGregor perforated casing 7,256-66 feet, 282 bbls., 15 per cent salt water.

Refugio County

Refugio field: Houston Oil Co. No. 50 Rooke, 6,226 feet, 167 bbls., one-eighth inch choke. Houston Oil Co. No. 51 Rooke, 6,248 feet, 194 bbls., one-eighth inch choke. Tomoconnor field: Copano Oil Co. No. 6 O'Connor, 5,918 feet, 563 bbls., one-quarter inch choke. L. A. Nordan No. 5-B O'Connor, 5,918 feet, 498 bbls., one-quarter inch choke. Quintana Petroleum Co. No. 69-A O'Connor, 5,943 feet, 1,171 bbls., three-eighths inch choke.

Victoria-Calhoun Counties

East Placedo field: Stanolind Oil & Gas Co. No. 2 Henderson and Pickering perforated casing 4,723-30 feet, 20,000,000 cubic feet of gas. Heyser field: Gulf Oil Corp. No. 4 Schultz, perforated casing 5,742-44 feet. 128 bbls., 3/32-inch choke.

West Texas Fields

(Continued from Page 96)

Yoakum County

J. W. Murchison No. 1 Wellart, 4,909-5,100 feet, 155 bbls. Texas Pacific Coal & Oil Co. No. 8 R. Bennett, 5,055-5,240 feet, 2,156 bbls.

WEST CENTRAL TEXAS COMPLETIONS

Coleman County

Schaffner and others No. 1 Foe Roper, dry and abandoned at 984 feet.

Comanche County

Gallagher and others No. 1 B. I. Terry, dry and abandoned at 5,260 feet.

Fisher County

S. & D. Daube No. 1 Bennett, 1,866-76 feet, 18 bbls. Humble Oil & Refining Co. No. 1 Dallas Joint Stock, dry and abandoned at 3,897 feet; No. 3 Spencer Lumber, dry and abandoned at 3,377 feet. Iron Mountain Oil No. 4 Haterius, 3,260-70 feet, 946 bbls. Martin & Son No. 2 Wyatt, dry and abandoned at 1,750 ffeet. Petroleum Producers Co. No. 7 Milsap, 1,953-58 feet, 290 bbls.

Montour Production Co. No. 1 W. L. Barker, dry and abandoned at 3,582 feet.

Jones County

Robert Co. No. 1 R. E. Pritchard, 2,065-82 feet, 81

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bbls. Robert Oil Corp. No. 1 Swann, 2,797-2,806 feet, 6 bbls. Shaheen Oil Co. No. 1 T. B. McCoy, dry and abandoned at 2,523 feet. Snoddy No. 1 Ormsby, abandoned location.

Palo Pinto County

Palo Pinto Oil & Gas No. 1 Strawn Coal Co., 3,018-3,125 feet, 500,000 feet gas.

Runnels County

H. Price and others No. 1 Beddo, 3,498-3,520 feet, 6 bbls.

Shackelford County

E. Beck No. 1 Dyer, dry and abandoned at 1,112 feet. Homer and others No. 1 Andrews, dry and abandoned at 816 feet. Wrightsman Oil Co. No. 1 Powers, dry and abandoned at 1,433 feet.

Stephens County

G. W. Rich No. 1 Andrews, 3,667-68 feet, 37 bbls.

Stonewall County

E. C. Lawson No. 1 Ada Humphrey, dry and abandoned at 3,534 feet.

Stonewall Oil Co. No. 1 Carlisle, 5,167-76 feet, 318 bbls.

PANHANDLE FIELD COMPLETIONS

Carson County

Texoma Natural Gas Co. No. 2-T Jordan, 2,310-2,510 feet, 34,521,000 feet gas.

British American Production Co. No. 6 Block, 2,983-3,048 feet, 241 bbls.

Gray County

Gulf Oil Corp. No. 7 Catlin B, 3,080-3,152 feet, 215 bbls.

Hutchinson County

Drilling & Exploration Co. No. 7 Pond, 3,005-83 feet, 422 bbls. Hobbs Oil Corp. No. 3 Hodges, 2,960-3,029 feet, 581 bbls. Drilling & Exploration Co. No. 22 Watkins, 2,970-3,012 feet, 425 bbls. Huber Petroleum Co. No. 6 Herring, 2,847-2,945 feet, 7,215,000 feet gas. Magnolia Petroleum Co. No. 6 Southwest O. & D., 3,100-45 feet, 295 bbls. Bob Murphy No. 3 Whittenburg, 2,675-2,740 feet, 739 bbls. Phillips Petroleum Co. No. 7 Thompson, 3,177-3,205 feet, 556 bbls.

Tide Water Associated Oil Co. No. 3 Umphres, 3,171-3,216 feet, 700 bbls.

Childress County

McMillan and Humble No. 1 Furr, dry and abandoned 5,762 feet.

Moore County

Shamrock Oil & Gas Co. No. 1-H Coffee, 2,840-3,119 feet, 43,430,000 feet gas.

Phillips Petroleum Co. No. 1 McKeig, 3,020-3,185 feet, 65,814,000 feet gas. Texhoma Natural Gas Co. No. 9 Coon, 2,675-2,760 feet, 12,250,000 feet gas.

Gulf Coast Fields

(Continued from Page 85)

ter-inch choke. Stanolind Oil & Gas Co. No. 5 Froberg, perforated casing 6,040-76 feet, 598 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 11 E. Grote, perforated casing 5,150-82 feet, 581 bbls., quarter-inch choke. Lockridge field: Gulf Oil Corp. No. 8-A Wilkes and Smith, perforated casing 6,363-67 feet, 128 bbls., quarter-inch choke. Old Ocean field: Harrison & Abercrombie No. 1 West Texas Abstract Co., perforated casing 9,900-25 feet, 310 bbls., various chokes. West Columbia field: Texas Co. No. 3 Rebecca-Goldman, sand 5,260-5,370 feet, 121 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 19-X H. A. Gripon, sand 7,050-80 feet, 675 bbls., quarter-inch choke. Barbers Hill field: Atlantic Refining Co. No. 1 John Schilling, 5,615 feet, 464 bbls. fluid, 16 per cent salt water, quarter-inch choke. Cotton Lake field: Gillespie and others No. 1 Lawrence, perforated casing 6,489-96 feet, 145 bbls., eighth-inch choke.

Galveston County

Dickinson field: Atlantic Refining Co. No. 5 Jones, perforated casing 8,103-11 feet, 608 bbls., quarter-inch choke. F. W. Bennett No. 4 Sam Levine, perforated casing 8,110-20 feet, 524 bbls., 12/64-inch choke. Bennett Production Co. No. 1 Scott, perforated casing 8,705-56 feet, 397 bbls., 12/64-inch choke. F. W. Bennett No. 4 Way, perforated casing 8,096-8,125 feet, 528 bbls., quarter-inch choke. Hitchcock field: N. W. Hunter No. 2 Aarco, sand 5,135-48 feet, 264 bbls., three-sixteenths-inch choke.

Fort Bend County

Orchard field: Gulf Oil Corp. No. 56 J. M. Moore, perforated casing 7,323-69 feet, 66 bbls., quarter-inch choke.

Hardin County

Silsbee field: General Crude Oil Co. No. 1 J. C. Caraway, sand 6,890-6,915 feet, 710 bbls., quarter-inch choke.

Harris County

Clinton field: Stanolind Oil & Gas Co. No. 1 M. J. Barraco, 4,184 feet, abandoned. Stanolind Oil & Gas Co. No. 3 Sanders, 3,806 feet, abandoned. Fairbanks field: Union Producing Co. No. 1 Goodykoontz, perforated casing 7,175-85 feet, 20,000,000 feet of dry gas. Windsor Oil Co. No. 2-A Ley, perforated casing 6,848-52½ feet, 650 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 2 Port City Ice Co., sand 5,944-6,042 feet, 605 bbls., quarter-inch choke.

Jefferson County

Amelia field: Stanolind Oil & Gas Co. No. 5 Keith-Dowlin, sand 5,343-75 feet, 409 bbls., quarter-inch choke.

Amelia field: Stanolind Oil & Gas Co. No. 1-A Howth, total depth 5,386 feet, 360 bbls, quarter-inch choke, tubing pressure 360 pounds, casing pressure 400 pounds.

Liberty County

Hardin field: Gulf Oil Corp. No. 2 A. B. Tullos, perforated casing 7,617-27 feet, 316 bbls., quarter-inch choke. Woodley Petroleum Co. No. 2 M. Chambers, perforated casing 7,629-33 feet, 562 bbls., quarter-inch choke. Hull field: Houston Oil Co. No. 6 Hannah, sand 5,095-5,200 feet, 1,100 bbls., three-eighths inch choke. Texas Co. No. 11 Hannah, sand 5,301-27 feet, 423 bbls., quarter-inch choke.

Hankamer field: Olsen Oil Co. No. 1 Ezzell, total depth 3,588 feet, dry and abandoned. Hardin field: Atlantic Refining Co. No. 1-B McMurtry, (W.O.), old total depth 7,855 feet, plug back depth 7,565 feet, perforated casing 7,556-60 feet, 310 bbls., quarter-inch choke, tubing pressure 2,000 pounds, casing pressure 2,000 pounds. Halliburton Oil Producing Co. No. 1 Hancky, total depth 7,650 feet, 540 bbls., quarter-inch choke, tubing pressure 1,000 pounds, casing pressure 1,200 pounds. Atlantic Refining Co. No. 2 Richardson, perforated casing 7,641-48 feet, 21 bbls. per hour, quarter-inch choke.

Matagorda County

McCrosky field: J. Pierce Estate, Inc., No. 4-A fee, total depth 6,626 feet, 103 bbls. 12 hours, quarter-inch choke, casing pressure 1,000 pounds (shut in), no tubing pressure. Markham field: Hamill & Smith No. 2 Hudson, total depth 4,888 feet in heaving shale, dry and abandoned. Bay City field: Hamman Exploration Co. No. 1 S. A. Foote, total depth 9,226 feet, 208.63 bbls., quarter-inch choke.

Montgomery County

Conroe field: George Smith No. 2 State, perforated casing 5,039-74 feet, 270 bbls., quarter-inch choke.

Wildcat: R. R. Kirkpatrick No. 1 Foster Lumber Co., southeast of Conroe, total depth 5,819 feet, dry and abandoned.

Wharton County

Withers field: Texas Co. No. 21-B Pierce Estate, 5,548 feet, 111 bbls., eighth-inch choke. Smith & McDannald No. 3 C. W. Britton, sand 5,540-45 feet, 60½ bbls., 5/64-inch choke.

Spanish Camp field: Albert Plummer No. 2 Sorrell, total depth 3,733 feet, plug back depth 3,605 feet, perforated casing 3,008-20 feet, 1,200,000 feet wet gas, eighth-inch choke, tubing pressure 1,450 pounds, casing closed. Withers field: Texas Co. No. 9-A Thompson, total depth 5,548 feet, 115 bbls., 5 per cent wash water, eighth-inch choke, tubing pressure 650 pounds, casing pressure 675 pounds.

Magnetic Storm

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports a moderate magnetic storm began at 9 p.m. August 10 and ended at 8 a.m. August 12—central standard time.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Aug. 13.—With several new or acidized wells testing and likely to increase their production, latest figures for Turner Valley show an aggregate crude potential of 53,665 bbls. a day.

In section 17-18-2w5, Coronation Royalties No. 1, LSD 15, finished at 7,572 feet with 582 bbls. temporary potential, was acidized and developed a flush production of 2,174.5 bbls. a day. Official potential was set at 1,450 bbls.

In section 29-18-2w5, Davies Petroleums No. 1, LSD 2, finished at 7,375 feet with temporary potential of 664 bbls., was cleaned out and acidized. It developed a flush production around 2,400 bbls. a day, settling to approximately 1,500 bbls.

In section 32-18-2w5, West Turner Petroleums No. 2, LSD 7, finished at 7,150 feet with 646 bbls. temporary potential, has been given a second acid treatment and is testing. First acid treatment brought production to around 2,000 bbls. It is expected to develop a major producer.

In section 5-19-2w5, West Central Turner Valley, Mercury Royalties No. 1, LSD 8, finished at 6,666 feet with 260 bbls. temporary potential, has been given a second acid treatment, and is testing production.

Tests in the Lime

In section 29-18-2w5, Royalite Oil Co No. 31, LSD 6, finished drilling around 3,000 feet, after getting the Madison limestone at 7,590 feet. It is being cleared of fluid preparatory to testing production. Commoil No. 2, LSD 10, same section, got the Madison limestone at 7,196 feet and cemented casing at 7,209 feet. It will be drilled into production with oil.

In section 17-18-2w5, Royalite Oil Co. No. 32, LSD 8, is below 7,148 feet after getting the Madison limestone at 6,800 feet. This is the only well in the limestone south of Highwood River and production at this point would extend the proven field a considerable distance.

West Side Drilling

In section 5-19-2w5, Royalite Oil Co. No. 34, LSD 7, is below 2,542 feet. It is a southerly offset to Vulvan-Brown Petroleums No. 1 big producer. Royalite No. 33, LSD 2, is below 7,088 feet.

In section 32-18-2w5, Freehold Oil Corp. No. 7, N half LSD 14, has cellar dug. Davies Petroleums No. 4, LSD 10, is in the Lower Benton formation below 4,710 feet and expects the lime contact at 6,700 feet. West Turner Petroleums No. 3, LSD 6, is below 4,300 feet.

In section 29-18-2w5, Command Oils No. 1, LSD 14, is below 3,625 feet.

In section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is in the Lower Blairmore formation below 7,152 feet. Producers Crude Corp. No. 1, LSD 11, is below 3,924 feet. Sunset Oils No. 2, LSD 7, is below 6,807 feet. York Oils No. 1, LSD 2, is below 6,749 feet with the lime expected at 7,010 feet.

In section 17-18-2w5, Extension Royalties No. 1, LSD 14, is standing at 3,685 feet, waiting for rotary outfit. Anglo-Canadian Oil Co. No. 3, LSD 10, is below 1,942 feet.

In section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is below 5,164 feet. Neil McQueen & Associates No. 1 Richwell, LSD 5, is below 4,384 feet after getting the Benton formation at 3,107 feet . Royal Canadian Oil Co. No. 2, LSD 4, is below 3,270 feet.

In section 9-18-2w5, D. & D. Oils No. 1, LSD 12, is spudding with rotary outfit. Location is southwest of National Petroleum Corp. No. 2 and believed outside the faulted area encountered in the latter.

In the south end of the field, Anglo-Canadian Oil Co. No. 2, LSD 2, section 33-16-2w5, is below 5,272 feet.

Okalta Deep Test

West of the proven field, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is in the Fernie shales below 9,625 feet and getting close to the lime, which has been looked for at 9,650 feet.

Anglo-Canadian Oil Co. 1, LSD 16, section 31-18-2w5, is below 4,549 feet.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is below 7,410 feet. At this depth it is in the Lower Blairmore formation, and not far above the lime.

Home Oil No. 2 Millarville, LSD 6, section 33-20-3w5, is below 4,988 feet.

New Tests Starting

In North Turner Valley, Royalite Oil Co. No. 35 has been located in LSD 7, section 27-20-3w5. Derrick has been finished and equipment is being installed. Location is fairly close to Royalite No. 29 Turner Basin, in the same section.

In section 13-19-2w5, West Central Turner Valley, Sun Ray Development Co., backed by Montreal interests, has started work on its No. 1 test in LSD 1. Acreage was subleased from Calgary & Edmonton Corp.

In section 32-18-2w5, Jack and Charles Perdue of Toronto have arranged to drill in LSD 5. British Colonial Oils No. 1, standing with a fishing job at 1,525 feet, may be completed, or an entirely new test drilled. Test is to be carried to the black lime and acidized as far as necessary, the Perdue interests to be recouped out of first production, less gross royalties and operating costs. Location offsets Royalite No. 30 producer to the southwest.

In the south end of Turner Valley, British Petroleums, Ltd., of Vancouver, has acquired leases on 320 acres in N half section 16-17-2w5, with a view to development. Acreage is south and west of Davies Petroleums No. 3 location.

Conservation Board Regulations

Regulations released by the Oil and Gas Conservation Board for Alberta provide for 40-acre spacing of wells in Turner Valley, and location of each well must be in the center of the lease in the absence of special dispensation from the board. Where a lease is less than 40 acres, no drilling can be started without permission of the board. Wells must not be located within 300 feet of road reservations, dwellings or public buildings without permission. In granting any special permit, the board may from time to time prescribe the amount of production that may be taken. It is understood that wells on 20-acre leases will be permitted somewhat less than the usual allowables for 40-acre tracts, probably two-thirds.

East Side Drilling

On the New Valley structure northwest of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, will cement casing at 8,200 feet and swab 2,000 feet of crude standing in the hole. It is believed the seepage is from below and a sand, likely to give commercial production, will be drilled through from present bottom at 8,462 feet.

H. P. McLeod, operating a small refinery at Okotoks, east of Turner Valley, is preparing to drill a test a quarter mile east of the plant for gas for refinery fuel. Test will be carried to 3,000 feet if necessary, but shallow gas production is expected within about 1,000 feet. The refinery, previously located near the Widney Petroleum well in Central Turner Valley, has been operating at Okotoks for several months, using Turner Valley crude and marketing its output locally.

Tests in the Foothills

On the Brazeau structure, in the northern foothills west of Edmonton, Home Oil Co. No. 1, LSD 16, section 7-43-17w5, is running 10-inch casing to bottom at 4,520 feet. Dr. J. O. G. Sanderson, consulting geologist, has recently checked the formations, which are logging satisfactorily.

On the Moose dome, 42 miles west of Calgary, Moose Oils No. 2, LSD 8, section 29-22-6w5, bottoming in a stray oil sand at 1,553 feet, is preparing to deepen to test a major horizon encountered in Moose No. 1 around 2,800 feet. Moose No. 1 has a gas flow, estimated several million feet a day, with 1,280 pounds pressure, and this will be utilized at No. 2. The latter has a small shallow gas flow, estimated 200,000 feet a day, with considerable 48-gravity crude from the shallow horizon, and is pumping crude intermittently, averaging about 50 bbls. a day, tankage not being sufficient for a thorough test. It pumped 79 bbls. in 14 hours and has marketed about 2,000 bbls. to Calgary. Loran Pilling will have charge of operations.

On Tawadina Creek, 25 miles west of Rocky Mountain House, Ram River Oils No. 1 has started work, and is expected to spud late in August.

In the Bearberry district west of Olds, Petroleum Structures No. 1, LSD 4, section 2-33-7w5, sponsored jointly by Anglo-Canadian Oil Co., Canadian Western Natural Gas Co. and associate interests, is moving rotary outfit from Extension Royalties No. 1 in South Turner Valley.

About 50 miles southwest of Rocky Mountain House, Northern Utilities, Ltd., and associated interests are preparing to drill on the south side of the Clearwater River, 20 miles west of Ricinus. The test is intended to develop a natural gas reserve.

On the Watson structure, in the southern foothills, Mar Jon Oil Co. No. 3, LSD 3, section 4-10-2w5, standing at 5,520 feet, will be completed with rotary outfit which is being moved to location. The test is expected to go to around 6,500 feet to reach the lime.

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is below 6,147 feet, more than 787 feet in the Madison limestone. The porous horizon, usually encountered between 400 and 500 feet in Turner Valley, appears considerable deeper in the Highwood area.

Grease Creek Project

Arrangements have been made for extensive development of the Grease Creek structure in the foothills 45 miles northwest of Calgary. Grease Creek Petroleums, Ltd., holding 9,860 acres on structure, in association with a Vancouver group, are interested in the development, and No. 1 test will be started this summer, if assistance can be procured from the Alberta government for a road into the field. It is planned to drill with standard tools to between 3,500 and 4,000 feet for a thorough test of structure and formations.

The Grease Creek structure was first geologized about 1926 by Stanley J. Davies for a Calgary group including R. J. Burns, Tom Lee and Wes Bushner. Reports were later made by P. D. Moore and Dr. T. A. Link for Imperial Oil, Ltd., which purchased the entire original block of 4,360 acres for cash and royalty, and has since held this acreage, a tentative location having been made on Harold Creek. Grease Creek Petroleums, Ltd., holds acreage west of the original holding and extending south across the Red Deer River, acreage being in Townships 28 and 29, Ranges 6w5 and 7w5. The field has also been reported on by Dr. G. S. Hume. The outcropping formation on the crest of the structure is Benton, with the overlying Belly River formation in the outlying portions, the general conformation being somewhat similar to the old Central Turner Valley area.

British Columbia Test

In the Fraser Valley, British Columbia, Natural Gas Development Corp. No. 1 Boundary Bay has arranged for resumption from 4,000 feet. An oil show was met at 3,890 feet and some evidence of saturation at lower levels, and oil and gas are expected in quantity around 4,500 feet.

Saskatchewan Drilling

In the Unity district, West Central Saskatchewan, Vera Oilfields No. 2, LSD 5, section 23-41-24w3, is below 2,010 feet after encountering a small oil show at around 2,000 feet. Several gas strikes have been cased off in drilling. Franco Oils, Ltd., has contract to carry the hole to the Devonian limestone, where production will be tested. The test is being drilled primarily for gas to supply Saskatoon.

Border Fields

In the Lethbridge area, southern Alberta, Northwest Co. No. 1 Lethbridge Southern, LSD 8, section 1-8-21w4, bottoming in the Madison limestone, at 4,055 feet, is bailing to test cement job. It got a show of 27-gravity crude in the top of the lime followed by water intrusion. Lethbridge Petroleums & Refining No. 1, LSD 12, section 11-8-22w4, is cleaning out caving at 2,873 feet.

In the Taber field, North Taber Royalties No. 1, LSD 7, section 10-11-15w4, is standing cemented at 336 feet. Crude from Plains Petroleums No. 2 is being used for fuel and lubricating.

In the Steveville district, Anaconda Oil Co. No. 1, LSD 15, section 9-22-12w4, is below 2,040 feet with 10-inch casing at 1,998 feet.

In the Barnwell area, Border Petro-

leums No. 1, LSD 5, section 32-19-17w4, is deepening after drilling through 300-foot cement plug to 2,504 feet. Test will be carried to the Madison limestone, around 3,300 feet.

On the Del Bonita structure south of Lethbridge, Terminal Oil Co. No. 2, NW quarter section 7-1-21w4, is moving boilers and working on derrick. Pat Adam is handling the drilling contract.

Surface Oil Show

Considerable attention has been attracted recently by a surface seepage of crude in Essex County near Comber. Location is on the Dr. T. H. Boyd farm near the corner of Concession 11 and Staples Sideroad, Tilbury West Township, where a pool of crude was found in a field of stacked oats. The pool is about 6 feet across and of considerable depth. Oil seepages were discovered in this area many years ago, and at one time, about 1906, production was developed by shallow drilling and some crude shipped. Commercial possibilities of the area will be investigated.

Ontario Operations

In Tilbury field, Kent County, Ontario, Union Gas Co. No. 304, Lot 180, North Talbot Road, Romney Township finished at 1,275 feet with a flow of 525,000 feet a day after a shot. Union No. 305, Lot 181, North Talbot Road, Romney Township, is below 650 feet.

In the De Clute field, Kent County, Union Gas Co. No. 41, E half W half Lot 146, North Talbot Road, Raleigh Township, is below 950 feet.

In Chatham Township, Kent County, Ogletree Syndicate No. 2, Lot 13, Concession 5, is shut down below 5,400 feet. It is planned to deepen to around 6,000 feet, establishing a new depth record for Ontario.

In the Dawn field, Lambton County, Union Gas Co. No. 96, Lot 24, Concession 4, Dawn Township, is below 900 feet.

In Malahide Township, Elgin County, Union Gas Co. No. 1 Malahide, Lot 25, Concession 7, finished a dry hole at 1,526 feet. A second test will probably be drilled in this area.

In Haldimand County, Union Gas Co. No. 207, Lot 3, Concession 3, Rainham Township, is shut down below 650 feet. Union No. 208 is starting in Lot 1, Concession 3, Rainham Township.

(Continued on Page 114)

California Oil Field Operations for June, 1938

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for June amounted to 20,170,317 bbls., an average of 672,343 bbls. per day. This is a decrease of 16,268 bbls. per day under May production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 2,435,522 bbls. The total stocks at the end of the month were 148,969,872 bbls. The total stock increase for 1938, up to June 30, was 20,929,625 bbls. Starting this month, stocks previously reported as item 1, "Fuel Oil Residuum and Non-Gasoline-Bearing Crude," will be separated. Attention is called to rearrangement of stock items.

Seventy-seven wells were completed during the month with an initial daily production of 76,936 bbls., compared with 96 wells completed during May with an initial production of 113,352 bbls.

CRUDE PETROLEUM PRODUCTION

(Figures of Production and Stocks are in barrels of 42 gallons)

Group No. 1—	Total production June	Daily average June, 1938	Daily average May, 1938	Daily average June, 1937
Belridge—North	362,350	12,078	12,264	15,452
Belridge—South	32,271	1,076	1,040	1,729
Canal	67,656	2,255	1,830	....
Canfield ranch	2,854	95	126	....
Coalinga	305,184	10,173	10,024	15,792
Edison	87,603	2,920	2,891	4,328
Elk Hills	319,266	10,642	10,811	10,804
Fruitvale	265,580	8,852	9,254	9,754
Greeley	124,190	4,140	3,473	1,077
Kern River	365,114	12,170	12,766	15,321
Kettleman Middle dome	1,510	50	54	128
Kettleman North dome	2,029,565	67,652	71,566	80,742
Lost Hills	107,301	3,577	3,656	3,810
McKittrick	90,930	3,031	3,300	4,212
Midway-Sunset	1,778,094	59,270	63,322	75,195
Mountain View	344,618	11,487	12,085	18,886
Mount Poso	521,077	17,369	19,240	16,910

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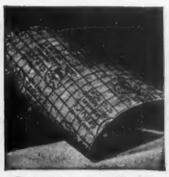

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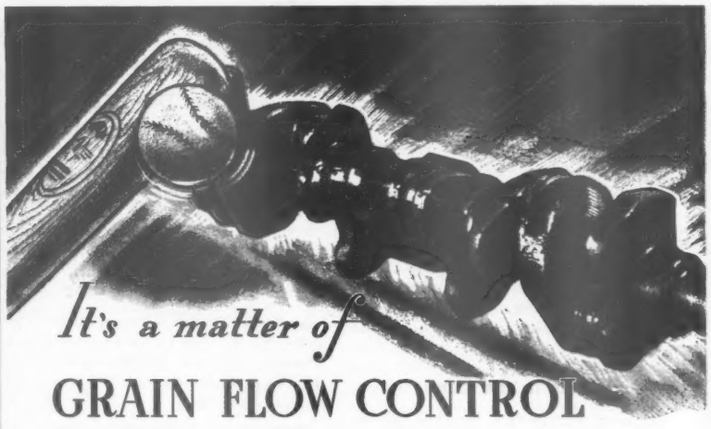

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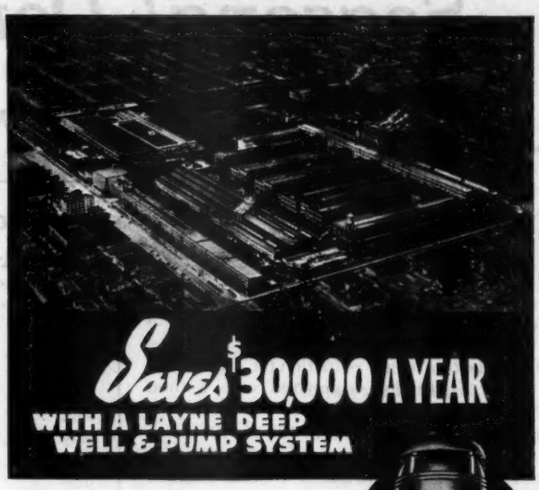
Round Mountain	434,386	14,480	15,738	12,196
Ten Section	198,294	6,610	5,948	2,736
Wasco	11,730	391	666	....
Wheeler Ridge	9,203	307	308	330
Group No. 2—				
Capitan	85,585	2,853	2,857	2,436
Elwood	200,007	6,667	6,757	9,215
Rincon	121,286	4,043	4,471	2,612
San Miguelito	75,448	2,515	2,768	3,127
Santa Barbara	12,663	422	454	653
Santa Maria	464,742	15,491	13,997	11,638
Summerland	1,115	37	35	33
Ventura Avenue	1,062,964	35,432	36,224	34,697
Ventura-Newhall	146,122	4,871	4,983	5,230
Watsonville	1,200	40	40	60
Group No. 3—				
Brea-Olinda	170,744	5,691	5,722	8,611
Coyote—East	105,441	3,515	3,552	3,804
Coyote—West	262,306	8,744	8,894	8,111
Dominguez	800,648	26,688	27,102	25,352
El Segundo	292,525	9,751	11,026	5,968
Huntington Beach	971,225	32,374	33,154	37,596
Inglewood	442,084	14,736	14,840	15,909
Lawndale	2,379	79	93	82
Long Beach	1,756,288	58,543	58,067	61,090
Los Angeles-Salt Lake	17,323	577	524	742
Montebello	331,096	11,037	10,676	8,935
Playa Del Rey	189,371	6,312	6,711	8,702
Potrero	25,567	852	453	294
Richfield	277,136	9,238	9,106	9,017
Rosecrans	239,565	7,986	6,810	3,056
Santa Fe Springs	1,011,914	33,731	36,246	44,767
Seal Beach	267,186	8,906	8,813	9,359
Torrance	425,388	14,180	11,746	8,048
Whittier	28,151	938	929	918
Wilmington	2,794,505	93,150	97,949	44,332
Total June	22,170,317	672,343	688,611	663,796
Total May	21,346,950	688,611		
Decrease	1,176,633	16,268		

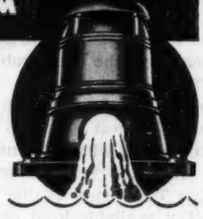
OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells—Drillers	Abd. wells—Producers
Group No. 1—							
Belridge—North	...	3	2	1,216	59	...	...
Belridge—South	...	...	2	110	86	...	...
Canal	1	2	1	1,483	8	...	...
Canfield ranch	...	1	...	.....	1	...	...
Coalinga	1	3	1	5	846	...	...
Edison	...	1	...	.....	88	...	...
Elk Hills	...	...	1	.....	169	...	1
Fruitvale	1	2	1	252	164	...	...
Greeley	...	3	1	10,000	11	...	...
Kern River	3	3	3	145	1,365	...	...
Kettleman Middle dome	...	...	...	.....	3	...	...
Kettleman North dome	2	11	5	10,295	186	...	...
Lost Hills	1	3	...	.....	222	1	...
McKittrick	...	2	...	.....	216	...	...
Midway-Sunset	2	4	1	45	2,440	...	1
Mountain View	...	...	1	3,020	195	...	...
Mount Poso	2	3	2	519	290	1	2
Rio Bravo	1	9	3	11,010	10	...	...
Round Mountain	6	4	4	692	185	1	...
Ten Section	2	4	2	6,321	22	...	...
Wasco	...	3	...	.....	2	...	...
Wheeler Ridge	...	1	...	.....	26	...	...
Group No. 2—							
Capitan	...	...	1	120	49	...	...
Elwood	...	...	...	.....	81	...	...
Rincon	1	2	...	.....	42	...	...
San Miguelito	1	1	...	.....	16	...	...
Santa Barbara	...	...	...	.....	34	...	...
Santa Maria	5	6	8	7,405	307	1	...
Summerland	...	...	...	.....	18	...	...
Ventura Avenue	...	10	...	.....	220	1	...
Ventura-Newhall	2	8	...	.....	548	2	...
Watsonville	...	...	...	.....	7	...	...
Group No. 3—							
Brea-Olinda	...	1	...	.....	347	... *	...
Coyote—East	...	1	...	.....	86	...	...
Coyote—West	1	...	1	407	50	...	...
Dominguez	1	3	...	.....	187	...	...
El Segundo	1	2	1	700	63	...	...
Huntington Beach	...	1	1	195	564	...	1
Inglewood	...	...	...	.....	207	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	1	3	5	1,877	1,265	1	...
Los Angeles-Salt Lake	...	...	...	.....	113	...	...
Montebello	4	10	2	1,153	223	...	...
Newport	...	1	...	.....	.....	...	...
Playa Del Rey	...	...	...	.....	195	...	...
Potrero	...	...	...	.....	12	...	...
Richfield	3	9	2	180	294	...	...
Rosecrans	5	8	1	1,220	93	...	...
Santa Fe Springs	...	...	...	.....	635	...	1
Seal Beach	...	...	...	.....	110	...	...
Torrance	16	14	11	4,674	542	...	1
Whittier	...	...	...	.....	142	...	...
Wilmington	15	29	14	13,892	509	...	...
Miscellaneous drilling	5	46	...	.....	.....	10	...
Group No. 4, gas fields—							
Buena Vista Lake	...	1	...	.....	1	...	...
Buttonwillow	...	...	...	.....	.....	...	...
Chowchilla	...	...	...	.....	.....	...	...
Delano	...	...	...	.....	.....	...	...
Dudley Ridge	...	...	...	.....	.....	...	...
Goleta	...	...	...	.....	.....	...	...
McDonald Island	...	...	...	.....	4	...	...
Rio Vista	...	1	1	gas	17	...	...
Semi-Tropic	...	...	...	.....	.....	...	...
Tracy	...	...	...	.....	.....	...	...
Total June	83	219	77	76,936	13,581	18	7
Total May	106	213	96	113,352	13,553	21	20
Decrease (*Increase)	23	*6	19	36,416	*28	3	13

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	June 30, 1938	May 31, 1938	June changes	Dec. 31, 1937 reclassified
1 Gasoline-bearing crude	33,156,394	31,529,797	+1,626,597	29,417,842
2 Nongasoline-bearing crude	17,431,809	17,352,744	+ 79,065	14,384,000
3 Unblended natural gasoline	3,190,274	2,913,534	+ 276,740	2,001,204
4 Gasoline (not including distributing and service stations)	12,975,245	13,895,109	— 919,864	13,520,678
5 Naphtha distillates	*1,496,083	*1,628,985	— 132,902	*1,464,577
6 Gas oil and diesel oil	9,669,433	9,297,687	+ 371,746	8,648,990
7 Fuel oil residuum	65,252,861	64,299,335	+ 953,526	54,145,388
8 All other stocks	5,797,773	5,617,159	+ 180,614	4,457,568
Total	148,969,872	146,534,350	+2,435,522	128,040,247
* Estimated amount of unfinished gasoline contained in item No. 5	1,302,349	1,425,807		1,248,291





WITH a water cost ranging from $40,000 to $50,000 a year, and possessing six unsatisfactory wells, the world-wide famous Allis-Chalmers Manufacturing Company, of Milwaukee, turned to Layne for a dependable, low cost water supply. The contract called for a minimum of 700 gallons per minute. Beginning with a sixteen-inch casing, The Layne Northwest Co. of Milwaukee (Affiliated Company of Layne & Bowler, Inc.) drilled to 1700 feet. A Layne Pump, operated by an Allis-Chalmers 100 horsepower motor, was installed. With a dependable capacity of near 1,700,000 gallons daily, their water is now being obtained at only 15% of former cost. Annual savings easily exceed $30,000.

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Refiners Curtail Runs Despite Better Seasonal Demand for Products

By W. T. ZIEGENHAIN

Despite a mounting seasonal demand for gasoline which should extend throughout August, refiners in the Mid-Continent area are showing no disposition to increase crude runs at their plants. Based upon estimates of schedules made about the first of this month August crude runs in the Mid-Continent area will be about the same as in July. The summation of the estimated schedules actually reflects a slight reduction for August, the total being 554,810 bbls. compared with a total of 557,520 bbls. for July.

When comparing these schedules with those maintained a year ago, this year's operations are shown to be greatly curtailed. During August, one year ago, the comparable crude runs totaled 624,475 bbls.

Among the various refining areas East Texas shows the largest decrease in the August schedules compared with a month ago and also compared with past yearly averages. This decline in the East Texas runs is due in part to a shortage of readily available local crude and the local refined oil price structure. It is hoped by the refiners in the East Texas area that through curtailed runs the price structure may be strengthened. The East Texas estimated August runs total 52,600 bbls. compared with 56,650 bbls. in July.

Southwest Texas

Southwest Texas refiners continue to operate on very uniform schedules and there are no changes in the list of active and idle plants there.

East Texas

Even though the total East Texas crude runs at refineries is estimated at a lower figure for August there is a tendency for more refineries in that area to operate. In the accompanying list are shown 17 refineries which plan to operate in August. The list also includes three plants which could operate and are temporarily idle.

Among the plants operating at present is the Utah Refining Co. at Kilgore which started up early in the month on the basis of processing 1,000 bbls. of crude daily. Just what effect the disconnecting of East Texas wells from pipe lines will have upon the East Texas refinery situation is problematical but if the practice is carried to the extreme it would be reasonable to expect local refiners to be tendered the crude from these disconnected wells and possibly at a price lower than the regular posted field price. This in turn would favor local refiners and could cause a resumption of operations in plants which could be reconditioned and which do not appear on the list.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1936	1937	1938
January	501,600	531,535	529,710
February	519,960	541,790	507,985
March	478,760	533,875	491,935
April	506,775	558,385	532,120
May	513,510	572,855	527,315
June	527,225	593,625	540,005
July	539,370	605,640	557,520
August	557,650	624,475	554,810
September	553,215	625,485	.....
October	536,330	619,210	.....
November	548,015	592,170	.....
December	535,500	544,040	.....

Operations by Refinery Districts

Daily crude runs

	Aug.	July	Decr.
Arkansas	26,550	26,650	100
East Texas	52,600	56,650	4,050
Kansas	131,600	131,850	250
N. Central Texas	36,760	38,830	2,070
North Louisiana	45,800	45,500	*300
Oklahoma	162,550	162,240	*310
Southwest Texas	17,750	17,550	*200
W. Texas Panhandle	81,200	78,250	*2,950
Total	554,810	557,520	2,710

*Increase.

West Texas and Panhandle

Unlike the East Texas area, West Texas and the Panhandle refiners show a slight increase in total refinery crude runs for August. In this combined group, schedules of 81,200 bbls. daily are contemplated in August compared with 78,250 bbls. in July. This increase of nearly 3,000 bbls. daily is accounted for primarily by increased schedules in the plants of the Cosden Oil Co. at Big Spring and the Gulf Oil Corp. at Sweetwater. In some parts of this area reports are coming in to indicate a shortage of local crude and this fact is probably holding down the total runs of the area.

North Central Texas

The North Central Texas group of refineries show a slight drop in their total crude runs for August compared with July. The difference of 2,070 bbls., however, is accounted for to a large extent by the reduction of runs at the Fort Worth refinery of the Gulf Oil Corp. and the shutting-down of the Graham Refining Co. at Graham. The Olney Oil & Refining Co. has also reduced runs at North Olney for August to help bring the total reduction of runs in the group to 2,070 bbls. daily.

Arkansas and North Louisiana

The two groups of refineries, those in North Louisiana and Arkansas show practically no change in their August schedules as compared with those in July. In North Louisiana the total runs are 300 bbls. higher and in Arkansas they are 100 bbls. less, leaving a net difference of 200.

One of the principle changes in the list is the addition of the name of the Lake-Price Refineries, Inc., which operate a new 800-bbl. plant at Princton, La., which is now processing 500 bbls. daily. The plant operates under the above name with J. A. Lake, Jr., president; C. R. Lake, vice president and treasurer, and N. R. Price, secretary. Offices are located at 405 City Bank Building in Shreveport, La.

Another important change in the list is the reduction in the total runs at the Rodessa Oil & Refining Co. plant at Cedar Grove from 10,000 bbls. in July to an estimated 6,600 bbls. daily in August. Balancing this to a large extent the East Texas Refining Co. plant at Sandra, La., will process an average of 5,000 bbls. daily compared with an estimated schedule of 3,300 bbls. in July.

Oklahoma and Kansas

Oklahoma and Kansas, two large refining groups show practically no change in their combined operations for August. The only important change in the entire list was the temporary shutting-down of the Eason Oil & Refining Co.'s plant at Enid, Okla. The effect is practically equalized, however, by higher estimated refinery crude schedules at the Enid plant of the Champlin Refining Co.

Estimated Daily Average Mid-Continent Refinery Crude Runs for August

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs Aug.	Av. dly. runs July
Berry Asphalt Co., Waterloo	2,000	1,150	1,200
Henry H. Cross, Smackover	6,000	3,000	3,000
Lion Oil Ref. Co., El Dorado	17,000	13,500	13,500
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Pet. Co., El Dorado	10,000	6,400	6,450
Stephens Ref. Co., Stephens	700	500	500
Total	38,200	26,550	26,650

KANSAS

Barnsdall Ref. Co., Wichita	5,000	5,000	5,000
Bay Pet. Co., McPherson	3,500	3,000	3,000
Chanute Ref. Co., Chanute	1,000	1,000	1,000
Chase Ref. Co., Chase	800	(*)	(*)
Derby Oil Co., Wichita	8,000	6,000	7,000
El Dorado Ref. Co., Eldorado	6,000	4,000	4,500
Falcon Ref. Co., Inc., Great Bend	1,000	850	850
Globe Oil & Ref. Co., McPherson	13,000	13,500	13,500
Kanotex Ref. Co., Arkansas City	12,000	8,500	7,500
National Ref. Co., Coffeyville	8,000	5,000	5,000
Pet. Products Co., Chanute	1,250	1,000	1,000
Phillips Pet. Co., Kansas City	23,000	17,500	17,100
Roper Pet. Co., Parsons	400	350	300
Shallow Water Ref. Co., Scott City	2,500	1,500	1,500
Shell Petroleum Corp., Arkansas City	20,000	(*)	(*)
Sinclair Ref. Co., Coffeyville	12,000	8,200	8,200
Sinclair Ref. Co., Argentine	11,000	8,000	8,200
Skelly Oil Co., Eldorado	23,000	20,000	19,500
Socony-Vacuum Oil Co., Inc., Augusta	20,000	16,000	16,500
Standard Oil Co., (Indiana), Neodesha	7,500	7,400	7,400
United Ref. Co., Russell	1,200	800	800
Vickers Pet. Co., Potwin	4,000	4,000	4,000
Total	184,150	131,600	131,850

*Shut down.

EAST TEXAS

Beacon Oil & Ref. Co., Henderson	4,500	(*)	(*)
Cascade Ref. Co., Reed Switch	3,000	1,000	2,000
Clay Ref. Co., Arp	3,500	2,000	2,100
Danciger Refs., Inc., Longview	6,000	4,000	5,000
East Texas Ref. Co., Longview	10,000	6,000	6,600
Hurricane Pet. Corp., Overton	5,000	2,800	2,850
Hurricane Pet. Corp., Arp	3,300	2,600	2,800
Lacy Ref. Co., Kilgore	3,000	2,200	2,500
Magnolia Pet. Co., Corsicana	5,000	5,400	5,400
McMurrey Pet. Corp., Tyler	10,000	(*)	(*)
Premier Oil Ref. of Texas, Greggtown	4,000	1,800	3,000

Company and location—	Daily capacity	Av. dly. runs— Aug.	July
Paluxy Asphalt Co., Talco	5,000	3,000	3,000
Sinclair Ref. Co., Camp Switch	4,000	2,000	4,000
Solvex Refs., Inc., Gladewater	4,500	(*)	(*)
Southport Pet. Co., Kilgore	4,000	3,500	2,700
Talco Asphalt & Ref. Co., Mt. Pleasant	7,000	5,000	4,500
Texas Co., The, Dallas	16,600	8,500	8,500
Texas Oil Products Co., Gladewater	3,000	1,000	1,200
Tower Ref. Co., Overton	3,500	800	500
Utah Ref. Co., Kilgore	2,000	1,000	(*)
Total	105,300	52,600	56,650

*Shut down.

NORTH CENTRAL TEXAS

Baird Ref. Co., Baird	1,500	1,200	1,300
Bryson Pipe Line & Ref. Co., Bryson	2,000	1,500	1,500
Coleman Ref. Co., Coleman	700	400	400
Continental Oil Co., Wichita Falls	6,000	4,500	4,500
Denver Prod. & Ref. Co., Gainesville	3,000	1,000	1,500
Exchange Pet. Corp., Albany	800	(*)	(*)
Falls Ref. Co., Wichita Falls	2,500	500	500
Graham Ref. Co., Graham	500	(*)	200
Gratex Ref. & Fuel Oil Co., Graham	500	285	285
Gulf Oil Corp., Fort Worth	8,000	5,800	7,000
Hightower Oil & Ref. Corp., Brownwood	750	200	200
Jacksboro Ref. Co., Jacksboro	400	175	175
La Salle Pet. Co., Burkburnett	3,000	1,000	650
Magnolia Pet. Co., Fort Worth	7,500	5,800	5,700
Midway Ref. Co., Goldsboro	300	100	100
North Texas Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	3,900	3,900
Olney Oil & Ref. Co., North Olney	3,500	1,500	2,000
Panhandle Ref. Co., Wichita Falls	4,200	3,000	3,000
Panhandle Ref. Co., Luederes	1,500	1,000	1,000
Southland Ref. Co., Olney	500	100	100
Taylor Ref. Co., Taylor	1,000	750	750
Texas Pacific Coal & Oil Co., Caddo	800	600	600
Tucker Oil Co., Burkburnett	400	150	170
Tydal Ref. Co., Gainesville	1,850	(*)	(*)
Waggoner Ref. Co., Electra	4,000	3,000	3,000
Total	62,800	36,760	38,830

*Shut down.

NORTH LOUISIANA

Arkansas Fuel Oil Co., Bossier City	25,000	20,000	19,000
Atlas Pipe Line Co., Shreveport	12,500	9,000	9,000
Bayou State Oil Corp., Hosston	750	500	500
East Texas Ref. Co., Sandra	7,000	5,000	3,300
Lake-Price Refineries, Inc.	800	500	.....
Premier Oil Ref. Co. of Texas, Cotton Valley	3,000	3,000	2,500
Rodessa Oil & Ref. Corp., Cedar Grove	12,000	6,600	10,000
Stanolind Oil & Gas Co., Superior	5,000	1,200	1,200
Total	62,250	45,800	45,500

OKLAHOMA

Anderson-Prichard Ref. Corp., Cyril	7,500	6,000	6,000
Barnsdall Ref. Co., Barnsdall	5,000	4,250	4,000
Bell Oil & Gas Co., Grandfield	5,000	3,000	3,000
Black Gold Ref. Co., Oklahoma City	2,500	(*)	(*)
Champlin Ref. Co., Enid	16,000	15,000	12,000
Cities Service Oil Co., Okmulgee	4,000	2,500	2,600
Cities Service Oil Co., Ponca City	12,000	10,000	9,670
Continental Oil Co., Ponca City	28,000	25,000	26,000
Cosco Oil Co., Wynnewood	3,000	1,700	2,500
Cushing Ref. & Gasoline Co., Blackwell	1,700	(*)	(*)
Cushing Ref. & Gasoline Co., Cushing	4,200	3,500	3,500
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	(*)	2,000
Globe Oil & Ref. Co., Blackwell	8,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	4,000	4,000
Knox Ref. Co., Covington	300	100	100
Mid-Continent Pet. Corp., West Tulsa	35,000	21,000	20,500
Ohio Oil Co., Bristow	5,000	3,000	2,780
Omar Ref. Co., Garber	5,000	3,000	3,000
Peppers Gasoline Co., Oklahoma City	500	400	400
Phillips Pet. Co., Okmulgee	6,500	6,000	5,500
Pure Oil Co., Muskogee	9,000	6,000	6,000
Rock Island Ref. Co., Beckett	6,500	5,400	5,000
Sinclair Ref. Co., Sand Springs	6,000	4,200	4,100
Sun Oil Co., Yale	5,000	2,000	2,000
Sunray Oil Co., Allen	7,000	3,000	3,570
Texas Co., West Tulsa	16,000	10,000	10,320
Tide Water Oil Co., Drumright	12,000	12,000	12,000
Wilcox Oil & Gas Co., Bristow	6,000	2,500	2,700
Total	235,700	162,550	162,240

*Shut down.

SOUTHWEST TEXAS

Carle Ref. Co., Inc., San Antonio	1,000	(*)	(*)
Dale Ref. Co., Dale	500	300	300
Eggleston Oil Products Co., Three Rivers	1,800	1,000	800
Humble Oil & Ref. Co., San Antonio	5,000	3,500	3,500
Ina Oil & Ref. Co., Hondo	400	(*)	(*)
Magnolia Pet. Co., Luling	8,000	6,500	6,500
Misko Refineries, Inc., Mirando City	4,500	(*)	(*)
Pettus Oil & Ref. Co., Pettus	1,000	800	800
Phoenix Ref. Co., San Antonio	1,200	700	700
Phoenix Ref. Co., Pettus	900	500	500
Pioneer Oil & Ref. Co., Somerset	2,000	750	750
Rado Ref. & Prod. Co., McAllen	800	700	700
Texas Co., San Antonio	5,000	2,600	2,600
White Wing Ref. Co., Sullivan City	1,000	400	400
Total	33,100	17,750	17,550

*Shut down. †Building.

WEST TEXAS AND PANHANDLE

Aero Gas & Ref. Co., Fort Stockton	350	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	(*)	(*)
Cosden Oil Co., Big Spring	15,000	12,000	9,500
Danciger Refs., Inc., Pampa	6,500	5,000	5,000
Danube Oil Corp., Borger	1,200	1,000	1,000
Farmers Ref., The, Lubbock	500	200	200
Gulf Oil Corp., Sweetwater	7,000	5,400	4,900
Howard County Ref. Co., Big Spring	2,000	1,100	1,100
Moutray Oil Co., Hawley	1,400	525	500
Onyx Ref. Corp., Hawley	3,000	1,700	1,700
Panhandle Ref. Co., Kings Mill	2,500	1,850	1,850
Payward Ref. Co., Shamrock	600	600	600
Phillips Pet. Co., Borger	35,000	25,000	24,510
Post Refining Co., Rotan	800	675	800
Shamrock Oil & Gas Corp., Sunray	3,000	2,000	2,000
Shamrock Oil & Gas Corp., Lefors	1,600	1,200	1,200
Standard Oil Co. of Texas, El Paso	14,000	7,400	8,490
Stamford Ref. Co., Stamford	450	400	450
Star Light Ref. Co., Ballinger	1,000	150	150
Texas Co., El Paso	2,000	1,300	1,300
Texas Co., Amarillo	6,000	3,000	3,000
West Texas Ref. Co., Pecos	500	(*)	(*)
Western Ref. Co., Fort Stockton	1,000	100	100
Wickett Pet. Co., Wickett	3,500	2,500	1,800
Total	122,050	81,200	78,250

*Shut down.

East Texas Fields

(Continued from Page 84)

Rusk County—Kilgore Area

J. Beren and others No. 9 Abe Hirt, 3,649-58 feet, 4 bbls. Delta Drilling Co. No. 6 C. E. Christian, 3,633-44 feet, 65 bbls. Humble Oil & Refining Co. No. 181 L. D. Crim, 3,586-97 feet, 85 bbls. Shell Petroleum Corp. No. 18 J. H. Spivey, 3,652-3,749 feet, 66 bbls.

Upshur County—Longview Area

Humble Oil & Refining Co. No. 44 J. K. Edwards, 3,617-77 feet, 40 bbls.; No. 7 A. L. Shelton, 3,680-96 feet, 35 bbls. Rancho Oil No. 9 H. W. Mayer, 3,626-42 feet, 60 bbls. Shell Petroleum Corp. No. 26 C. C. Landers, 3,764-92 feet, 60 bbls. Stanolind Oil & Gas No. 2 J. C. Newman, 3,667-72 feet, 39 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Franklin County

In the Talco field, Humble Oil & Refining Co. No. 6 Lena Wims, 4,270-80 feet, 326 bbls.

Henderson County

O'Byrne No. 1 J. E. Reese, abandoned location. In the Flag Lake field, the Texas Co. No. 2 Nolan, dry and abandoned at 3,060 feet.

Houston County

Humble Oil & Refining Co. No. 1 C. C. Hill, dry and abandoned at 3,935 feet.

Leon County

Lone Star No. 2 G. W. Lee, 115,000,000 feet of gas from 5,542-96 feet.

Limestone County

J. S. Cosden, Jr., No. 1 Bower, dry and abandoned at 1,595 feet.

McLennan County

Russell & Thompson No. 1 Phillips, dry and abandoned at 1,070 feet.

Titus County

In the Talco pool, Humble Oil & Refining Co No. 4 G. A. McPeter, 4,224-74 feet, 236 bbls.

NORTH TEXAS COMPLETIONS

Archer County

Mrs. T. Andrews No. 1 N. I. Andrews A, 1,075 feet, dry. Ligon & Burns No. 1 A. P. Nichols, 3,866-4,400 feet, 57 bbls. Underwood Drilling Co. No. 23 R. Campbell B, 997 feet, dry.

Clay County

Beasley and others No. 2 C. J. Shumake, 1,130-57 feet, 30 bbls. H. Bowers No. 2 C. J. Shumake, 1,122-45 feet, 167 bbls. J. B. Rugeley No. 1 N. Texas Co., 1,735 feet, dry. J. M. Tanner and others No. 7 G. D. Rigsby, 220-30 feet, 5 bbls.

Cooke County

A. G. Hutton No. 1 F. Truebenbach, 963 feet, dry. Texas Co. No. 9 T. Trubenbach, 792-813 feet, 55 bbls.

Jack County

Benoil Co. No. 2 Mantooth, abandoned location. Big Six Oil Co. No. 4 E. F. Smith, 2,350-61 feet, 45 bbls. Geace & Barrow No. 1 J. M. Bloodworth, 310-39 feet, 10 bbls. McKee & Mullins No. 2 Robert Wilson, 421 feet, dry. Peery & Woody No. 1 H. Walden, 2,150-2,971 feet, 21 bbls. A. E. Sewell No. 1 George Edwards, 400 feet, dry.

Wilbarger County

Cosden Oil Co. No. 35 W. T. Waggoner B, 2,291-2,320 feet, 25 bbls.

Wise County

Latex Oil Co. No. 2 Smith, 4,083 feet, dry.

Wichita County

Peery Browning No. 1 G. W. Lewis, 3,734-3,825 feet, 560 bbls. Burk Royalty Co. No. 1 A. W. Burnside, 3,940-97 feet, 350 bbls. L. T. Burns No. 22 First National Co., 3,587-3,858 feet, 1,296 bbls. Continental Oil Co. No. 2-B Martin, abandoned location. G. W. Cooper No. 51 J. L. and T. J. Waggoner, 3,726-85 feet, 250 bbls. Deep Oil Development Co. No. 9 First National Co., 3,660-3,845 feet, 328 bbls.; No. 16 Munger A, 3,670-3,907 feet, 600 bbls.; No. 5 J. R. Pace, 3,860-3,936 feet, 632 bbls. H. D. Egger No. 1 D. R. Preston, 3,815-76 feet, 856 bbls. J. E. Farrell No. 6 Waggoner Brothers, 3,835-95 feet, 560 bbls. Geier Brothers, Inc., and Jackson No. 3 Sue Mitchell B, 3,842-98 feet, 712 bbls. Grace & Wood No. 4-A W. L. Hodges, 3,798-3,944 feet, 195 bbls. Haberle & Thornton No. 1 J. W. Carter, abandoned location. D. W. Jones, Inc., No. 2 W. L. Hodges, 3,836-3,912 feet, 280 bbls.

King Oil Co. No. 5 River Bed, 3,762-3,785 feet, 712 bbls. King & Clark No. 1 S. W. Wigley B, 4,354 feet, dry. King & Perkins Cullum No. 2 Charles Pettit, 3,844-85 feet; No. 1 Pettit State of Texas, 3,847-87 feet, 1,200 bbls. Lewis Production Co. No. 6 Mangold, 3,745-3,800 feet, 1,756 bbls. J. J. McRoberts No. 1 Waggoner Brothers, 3,650-4,002 feet, 20 bbls. Mitchell Oil Co. No. 4 Sue Mitchell C, 3,811-48 feet, 960 bbls. Palmer & Chenault No. 8 McCarthy, 1,331-1,480 feet, 5 bbls. Pois & Schulz No. 2 Ed Foster, 1,303 feet, dry. D. W. Power and others No. 7-A L. C. Denny, 568-93 feet, 3 bbls. Madden & Goldsmith No. 1 J. L. Jackson, 2,742-90 feet, 500 bbls. Panhandle Refining Co. No. 1-A J. L. Jackson, 2,621-33 feet, 325 bbls. D. W. Poer and others No. 8-A Denny, 540-88 feet, 15 bbls. Retsal Drilling Co. No. 2 Seay, 3,671-3,869 feet, 1,144 bbls. Roberts Estate No. 4 R. L. Kempner 3,860-3,900 feet, 720 bbls. Shell Petroleum Corp. No. 1 R. L. Kempner, 3,782-3,878 feet, 770 bbls. Sinclair Prairie Oil Co. No. 3 N. H. Martin, 3,680-3,799 feet, 480 bbls. Staley Oil Co. No. 8 First National Co., abandoned location; No. 9 First National Co., abandoned location; No. 10 First National Co., abandoned location.

Staniforth Oil Co. No. 2 N. H. Martin, 3,762-3,901 feet, 342 bbls.; No. 3 N. H. Martin, 3,790-3,826 feet, 326 bbls. Sunray Oil Co. No. 7 Mangold, 3,705-99 feet, 527 bbls.; No. 9 Mrs. Mangold, 3,713-99 feet, 840 bbls.; No. 10 Mrs. Anna Mangold, 3,714-67 feet, 276 bbls. Sam K. Vierson No. 2 R. L. Kempner Roach, 3,782-3,865 feet, 500 bbls. Mrs. Hulda B. Wallace No. 2 W. J. Logan D, 3,729-3,833 feet, 750 bbls.

Young County

Brazelton Brothers No. 2 Mrs. C. H. McBrayer, 690 feet, dry. N. B. Dollins No. 2 J. A. Cole, 700 feet, junked. Kleiner and others No. 12 J. H. Davis, 531-75 feet, 5 bbls. McVan and others No. 1 Grigsby, abandoned location. L. A. Long No. 1 F. A. Burnett, 3,807-62 feet, 40 bbls. Mudge Oil Co. No. 7 W. B. Harrison, 3,900-29 feet, 144 bbls.

Total Demand for Oil Is 99 Per Cent of 1937

Crude oil production continued to decline in June, when the daily average was 3,139,200 bbls., compared with 3,183,000 bbls. in May and 3,527,100 bbls. in June, 1937. Although production in 1938 started off at a much higher rate than in 1937, the total for the first half of 1938 (602,745,000 bbls.) was about 17,500,000 bbls. less than the total for the first half of 1937.

The principal change in state production in June occurred in Oklahoma where the daily average fell to 430,700 bbls., the lowest since May, 1933. California's output registered its fourth successive decline but remained considerably in excess of all objectives. Production in Kansas and Louisiana showed small increases, the gain in the latter being related primarily to the new record for the coastal fields. The daily average output of Texas (1,212,000 bbls.) was slightly under the average in May. The decline in Texas in June was about equal to the decrease in the East Texas, where, because of the shutdowns, production fell to the lowest level since April, 1933. Illinois failed to show a gain in output for the first time in over a year. Although daily average crude runs to stills declined materially, heavy drafts were made on crude oil stocks, which decreased 6,349,000 bbls., to 292,634,000 bbls. on June 30.

Refined Products: The yield of gasoline continued to increase although the gain of June (44.3 per cent) over May (44.2 per cent) was slight. The indicated demand for motor fuel was again slightly under last year's record but, because of continued heavy exports, the total demand was 2 per cent above that of June, 1937. The domestic demand in June, 1938, was 48,293,000 bbls., exports were 4,284,000 bbls. The situation as regards gasoline inventories improved greatly in June, finished and unfinished gasoline stocks declining 7,616,000 bbls. to 80,531,000 bbls. on June 30. These data compare with a decline of 4,624,000 bbls. in June, 1937, and stocks of 75,053,000 bbls. on hand June 30, 1937.

The demand for both major classes of fuel oil continued to run considerably under a year ago, about the only encouraging sign being a decrease in the rate at which the heavy grades are being added to storage.

United States Supply and Demand—Crude Oil (Bbls.)

First half 1938 and 1937

SIX MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	INDICATED DOMESTIC DEMAND‡	EXPORTS	STOCKS REFINABLE CRUDE JUNE 30
1938	615,392,000	628,842,000	13,450,000	2.2	602,745,000	12,647,000	588,665,000	40,177,000	‖292,634,000
Daily average	3,400,000	3,474,000			3,330,000	70,000	3,252,000	222,000	
1937	631,903,000	611,694,000	*20,209,000	*3.3	620,166,000	11,737,000	583,249,000	28,445,000	308,788,000
Daily average	3,490,000	3,379,000			3,526,000	65,000	3,277,000	157,000	
Increase, 1938	†16,511,000	17,148,000			†17,421,000	910,000	5,416,000	11,732,000	†16,154,000
	†2.6%	2.8%			†2.8%	7.7%	0.9%	41.2%	†5.2%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

SIX MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	DOMESTIC DEMAND	EXPORTS	STOCKS JUNE 30§
1938	274,697,000	268,671,000	*6,026,000	*2.3	274,697,000		244,754,000	23,917,000	80,676,000
Daily average	1,517,000	1,484,000			1,517,000		1,352,000	132,000	
1937	274,527,000	260,979,000	*13,548,000	*5.2	274,527,000		243,730,000	17,249,000	73,866,000
Daily average	1,516,000	1,440,000			1,516,000		1,345,000	95,000	
Increase, 1938	170,000	7,692,000			170,000		1,024,000	6,668,000	6,810,000
	.06%	2.9%			0.6%		0.4%	38.6%	9.2%
Kerosene									
1938	32,932,000	30,813,000	*2,119,000	*6.9	32,932,000		26,754,000	4,059,000	9,202,000
1937	31,313,000	30,165,000	*1,148,000	*3.8	31,313,000		26,183,000	3,982,000	6,781,000
Increase, 1938	1,619,000	648,000			1,619,000		571,000	77,000	2,421,000
	5.1%	2.1%			5.1%		2.2%	2.0%	36.0%
Gas Oil and Residual Fuel Oil¶									
1938	231,064,000	220,814,000	*10,250,000	*4.6	220,219,000	10,845,000	197,291,000	23,523,000	120,389,000
1937	229,609,000	243,669,000	14,060,000	5.8	217,038,000	12,571,000	222,769,000	20,900,000	101,881,000
Increase, 1938	1,455,000	†22,855,000			3,181,000	†1,726,000	†25,478,000	2,623,000	18,508,000
	0.4%	†9.4%			1.4%	†13.7%	†11.4%	12.5%	18.1%
Gas Oil and Distillate Fuels									
1938	72,835,000	70,702,000	*2,133,000	*3.0	72,835,000		55,120,000	15,582,000	24,699,000
1937	68,976,000	71,038,000	2,062,000	2.9	68,450,000	526,000	57,500,000	13,538,000	20,657,000
Increase, 1938	3,859,000	†336,000			4,385,000		†2,380,000	2,044,000	4,042,000
	5.6%	†0.5%			6.4%		†4.1%	15.1%	19.5%
Residual Fuel Oils									
1938	158,229,000	150,112,000	*8,117,000	*5.4	147,384,000	10,845,000	142,171,000	7,941,000	95,690,000
1937	160,633,000	172,631,000	11,998,000	13.0	148,588,000	12,045,000	165,269,000	7,362,000	81,224,000
Increase, 1938	†2,404,000	†22,519,000			†1,204,000	†1,200,000	†23,098,000	579,000	14,466,000
	†1.4%	†13.0%			†0.8%	†9.9%	†13.9%	7.9%	17.8%
Lubricating Oils									
1938	15,453,000	14,853,000	*600,000	*5.0	15,453,000		9,904,000	4,949,000	8,114,000
1937	17,417,000	17,453,000	36,000	0.2	17,417,000		12,000,000	5,453,000	6,447,000
Increase, 1938	†1,964,000	†2,600,000			†1,964,000		†2,096,000	†504,000	1,667,000
	†11.2%	†14.9%			†11.2%		†17.4%	†9.2%	26.0%
Petroleum Wax (Lbs.)									
1938	239,996,000	246,728,000	6,732,000	2.7	221,200,000	18,796,000	158,304,000	88,424,000	138,260,000
1937	271,094,000	277,967,000	6,873,000	2.6	257,320,000	13,774,000	150,052,000	127,915,000	103,761,000
Increase, 1938	31,098,000	†31,239,000			†36,120,000	5,022,000	8,252,000	†39,491,000	34,499,000
	11.4%	†11.2%			†14.0%	36.5%	5.5%	†30.8%	33.2%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments. ‖Does not include 17,425,000 bbls. of heavy oil in California. Comparable figure for June 30, 1938, not available.

Crude Oil Run to Stills and Total All Oils (Bbls.)

SIX MONTHS—	TOTAL IMPORTS§	TOTAL EXPORTS§	TOTAL CRUDE TO STILLS	PER CENT YIELD GASOLINE‡	NATURAL GASOLINE PRODUCTION	TOTAL SUPPLY ALL OILS*	TOTAL DEMAND ALL OILS*	STOCKS ALL OILS JUNE 30*
1938	25,633,000	97,420,000	570,757,000	46.8	24,919,000	654,069,000	634,548,000	583,507,000
Daily average	142,000	538,000	3,154,000	....	137,000	3,613,000	3,506,000	
1937	27,078,000	77,068,000	566,911,000	46.9	22,973,000	671,668,000	639,629,000	550,685,000
Daily average	149,000	431,000	3,142,000	....	127,000	3,711,000	2,981,000	
Increase, 1938	†1,445,000	20,352,000	3,846,000	....	1,946,000	†17,599,000	†5,081,000	32,822,000
	†5.3%	26.4%	0.6%	....	8.4%	†2.6%	†0.8%	5.9%

*Total all oils includes crude and refined products, natural gasoline and benzol. Stocks on June 30, 1938, represented 166 days' supply which compared to 156 days on same date in 1937. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Wilshire Oil, No. 1 Hollister, Gaviota, Santa Barbara	35- 5-33	4,650	P.B. 3,450
Shell Oil, No. 1-27 Covarrubias, Capitan, Santa Barb.	32- 5-30	1,320	O.S. drlg.
Barnsdall Oil, No. 19 Bell, Elwood, Santa Barbara	15- 4-29	4,970	deepening
Hancock-Bush, No. 3 Cal. Lands, Santa Maria, S. Barb.	30-10-33	4,435	sd. sh. drlg.
Union Oil, No. 2 Wheat, Santa Maria, Santa Barbara	22-10-34	3,945	pump 160 b.d.
Union Oil, No. 2 Mallory, Santa Maria, Santa Barbara	27-10-34	5,135	sd. sh. drlg.
Greathouse Oil, No. 1 Fortier, Santa Maria, S. Barb.	27-10-34	4,273	flow 830 b.d.
Standard Oil, No. 1, Cat Canyon, Santa Barbara	27- 9-33	6,440	sd. sh. drlg.
Douglas Oil, No. 1 Stratton, Los Alamos, Santa Barb.	8- 8-33	6,000	pump water
Barnsdall Oil, No. 5 Magenheimer, Gato Rdg., S. Bar.	9- 8-32	2,396	hd. sh. drlg.
Petrol Corp., No. 511 Magenheimer, Gato Rdg., S. Bar.	9- 8-32	2,863	br. sh. drlg.
Oceanic Oil, No. 1 Santa Barbara Mesa, Santa Barbara	28- 4-27	2,049	cleaning out
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,691	fishing
Holly Dev., No. 1 Macrate, Ojai, Ventura	27- 4-23	4,377	br. sh. drlg.
Ventura Drlg., No. 1, Ojai, Ventura	10- 3-23	170	sd. sh. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	6,126	cmtd. 3,930
Merchants Pet., No. 1, Sespe, Ventura	1- 4-20	798	hd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	510	cleaning out
Stalling & Senter, No. 1, Timber Canyon, Ventura	24- 4-21	1,440	P. B. 1,340
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	1,923	O. S. drlg.
McKinnis, C. R., No. 1 Hopper Canyon, Ventura	14- 4-19	449	sd. sh. drlg.
Texas Co., No. 135 Shiells, Shiells Canyon, Ventura	4- 3-19	268	sd. sh. drlg.
Darby Oil, No. 1 Cohn, Moor Park, Ventura	7- 2-19	4,650	dry; abd.
Continental Oil, No. 9 Grubb, San Miguelito, Ventura	24- 3-24	4,770	sd. sh. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	3,081	hd. sd. drlg.
C. C. M. Oil, No. 7-C Hobson, Rincon, Ventura	17- 3-24	3,602	O. S. drlg.
Richfield Oil, No. 5-F State, Rincon, Ventura	17- 3-24	805	cleaning out
Tide Water A., No. 39 V. L. W., Ventura Ave., Ventura	24- 3-23	6,880	sd. sh. drlg.
Tide Water A., No. 75 Lloyd, Ventura Ave., Ventura	26- 3-23	6,650	sd. sh. drlg.
Tide Water A., No. 111 Lloyd, Ventura Ave., Ventura	27- 3-23	9,803	O. S. drlg.
Tide Water A., No. 127 Lloyd, Ventura Ave., Ventura	27- 3-23	7,985	sd. sh. drlg.
Tide Water A., No. 134 Lloyd, Ventura Ave., Ventura	27- 3-23	9,378	cleaning out
Tide Water A., No. 7 Hartman, Ventura Ave., Ventura	22- 3-23	6,873	sd. sh. drlg.
Tide Water A., No. 11 McGonigle, Ventura Ave., Vent.	23- 3-23	8,650	hd. sd. drlg.
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	7,390	fish bit
Shell Oil, No. 30 Edison, Ventura Ave., Ventura	20- 3-23	2,038	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	7,798	mill tubing
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	8,618	P. B. 8,470
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	7,772	recmtd. 7,750
Lloyd Corp., No. 2 Dabney-Lloyd, Ventura Ave., Vent.	23- 3-23	2,482	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	805	hd. sd. drlg.
Lyse & Sonne, No. 1 Pasadena, McKittrick, Kern	28-30-22	4,032	P. B. 3,422
Randan Pet., No. 1 Theta, Lost Hills, Kern	3-26-20	1,625	pump 140 b.d.
Belridge Oil, No. 27-13, North Belridge, Kern	27-20-20	3,784	sd. sh. drlg.
Tide Water A., No. 22-3, North Belridge, Kern	22-27-20	3,996	sd. sh. drlg.
Richfield Oil, No. 2 Belridge, North Belridge, Kern	22-27-20	8,111	br. sh. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	8,273	D. P. stuck
Honolulu Oil, No. 47, Round Mountain, Kern	20-28-29	2,020	pump 565 b.d.
Honolulu Oil, No. 49, Round Mountain, Kern	20-28-29	1,596	sd. sh. drlg.
Amerada Pet., No. 1 Olcese, Round Mountain, Kern	4-29-29	3,400	granite; abd.
Kern Oil, No. 25-3-C, Kern Front, Kern	25-28-27	1,987	P. B. 1,965
Helm & Smith, No. 5-A Kernco, Kern River, Kern	34-28-28	675	pump 17 b.d.
Barnhart & Morrow, No. 1 Zanetti, Kern River, Kern	19-28-28	1,185	idle
Barnhart & Morrow, No. 5 KCL, Kern River, Kern	11-28-27	1,733	bailing
Hast Oil, No. 4 Kern, Kern River, Kern	34-28-28	346	O. S. drlg.
Federal Drlg., No. 3 Glide, Mount Poso, Kern	13-26-28	1,615	sd. sh. drlg.
Marcan Oil, No. 5 Glide, Mount Poso, Kern	1-27-27	2,675	sd. sh. drlg.
Ring Oil, No. 7 Bowles, Mount Poso, Kern	29-26-28	1,740	rig to pump
Ring Oil, No. 3 Rogers-Jones, Mount Poso, Kern	29-26-28	1,697	sd. sh. drlg.
Richfield Oil, No. 1, Union Avenue, Kern	6-30-28	1,878	sd. sh. drlg.
Western Gulf Oil, No. 4 Sawyer, Fruitvale, Kern	27-29-27	3,837	flow 80 b.d.
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	8,220	hd. sh. drlg.
Pacific O. & G., No. 3 Guisti, Fruitvale, Kern	14-29-27	2,692	sd. sh. drlg.
Hogan Pet., No. 3 Peters, Mountain View, Kern	5-31-29	5,460	bailing
Greer, P. H., No. 2 Perrel, Mountain View, Kern	9-31-29	6,638	redrlg. 6,271
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	11,405	sd. sh. drlg.
Continental Oil, No. 1 Seaboard, KCL, Wasco, Kern	26-27-24	12,778	fish core bbl.
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-27-24	11,411	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	9,890	sd. sh. drlg.
Superior Oil, No. 3 Geissinger, Bravo, Kern	35-28-25	11,300	O. S. drlg.
Superior Oil, No. 1 Anderson, Rio Bravo, Kern	35-28-25	11,608	flow 920 b.d.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	12,745	sd. sh. drlg.
Union Oil, No. 2-34, KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 8,750
Union Oil, No. 4-34, KCL, Rio Bravo, Kern	34-28-25	10,890	sd. sh. drlg.
Union Oil, No. 5-34, KCL, Rio Bravo, Kern	34-28-25	5,420	sd. sh. drlg.
Getty Oil, No. 2 Ramsey, Rio Bravo, Kern	35-28-25	11,407	hd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	11,300	sd. sh. drlg.
General Pet., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	9,282	sd. sh. drlg.
Standard Oil, No. 18-1, KCL, Una, Kern	29-28-26	10,499	sd. sh. drlg.
Shell Oil, No. 85-35, KCL, McFarland, Kern	35-26-25	10,061	dry; abd.
Tide Water A., Well No. 1, Pond, Kern	17-26-25	8,761	gr. sd. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,882	pump 10 b.d.
Standard Oil, No. 11-15 KCL, Greeley, Kern	18-29-26	7,735	cleaning out
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	9,860	sd. sh. drlg.
Superior Oil, No. 1 Krause, Greeley, Kern	21-29-26	8,178	may deepen
Continental Oil, No. 2-B KCL, Rosedale, Kern	12-29-26	7,252	sd. sh. drlg.
Continental Oil, No. 1-E KCL, Stevens, Kern	17-30-26	8,574	P. B. 8,230
Standard Oil, No. 15-2 KCL, Canfield Ranch, Kern	27-30-26	8,525	fish D. P.
Shell Oil, No. 61-29-A KCL, Ten Section, Kern	29-30-26	8,230	flow 2,962 b.d.
Shell Oil, No. 2-32-B KCL, Ten Section, Kern	32-30-26	7,996	sd. sh. drlg.
Shell Oil, No. 72-31-B KCL, Ten Section, Kern	31-30-26	7,189	sd. sh. drlg.
Shell Oil, No. 67-20-B KCL, Ten Section, Kern	20-30-26	7,280	sd. sh. drlg.
Shell Oil, No. 45-14-A KCL, Canal, Kern	14-30-25	4,797	sd. sh. drlg.
Ohio Oil, No. 8-E KCL, Canal, Kern	14-30-25	2,167	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Tupman, Kern	32-30-25	3,796	sd. sh. drlg.
Ohio Oil, No. 1-F, KCL, Coles Levee, Kern	10-31-25	1,962	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	11,186	testing
Signal Oil, No. 5 Kendon, Midway-Sunset, Kern	35-32-23	2,121	br. sh. drlg.
Cates, M. B., No. 8 Special, Midway-Sunset, Kern	2-11-24	634	bailing
Mascot Oil, No. 3 Midway, Midway-Sunset, Kern	36-32-23	2,828	P. B. 1,650
Magnuson, C. A., No. 1 Midway, Midway-Sunset, Kern	19-31-23	1,915	sd. sh. drlg.
Big Ten Oil, No. 12 Midway, Midway-Sunset, Kern	36-32-23	660	sd. sh. drlg.
National Oil, No. 18, Midway-Sunset, Kern	35-32-23	2,042	pump 230 b.d.
Vanguard Oil, No. 1 Heavilin, Midway-Sunset, Kern	34-32-24	4,348	idle
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	10,250	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	5,890	sd. sh. drlg.
Pure Oil, No. 1 SPL, Huron, Fresno	31-18-17	11,518	hd. sh. drlg.
Magnet Oil, No. 2 Fearon, Fresno	18-19-15	3,550	redrlg. 3,185
Jacalitos Oil, No. 1, Jacalitos Hills, Fresno	14-21-15	6,662	sd. sh. drlg.
Pet. Sec., No. 7-7-F, Guijarral Hills, Fresno	18-20-16	3,996	hd. sh. drlg.
Pet. Sec., No. 88 Grimes, Guijarral Hills, Fresno	12-20-15	6,380	sd. sh. drlg.
Goetz, F., Co., No. 1, Guijarral Hills, Fresno	10-20-15	5,190	sd. sh. drlg.
Standard Oil, No. 82-13 fee, Guijarral Hills, Fresno	13-20-15	2,384	sd. sh. drlg.
Texas Co., No. 19 Mohawk, Guijarral Hills, Fresno	12-20-15	4,383	sd. sh. drlg.
Universal C., No. 1 Leavitt, Guijarral Hills, Fresno	12-20-15	6,071	sd. sh. drlg.
Tide Water, No. 33 Guardian, Guijarral Hills, Fresno	12-20-15	2,984	sd. sh. drlg.
Superior Oil, No. 1 Hight, Guijarral Hills, Fresno	8-20-16	6,371	sd. sh. drlg.
Cent. Valley Oil, No. 1, Burkhead, Fresno	1-12-20	622	sd. sh. drlg.
K.N.D.A., No. 85-34-J, Kettleman North, Kings	34-21-17	8,302	deepening
K.N.D.A., No. 38-6-Q Kettleman North, Kings	6-22-18	6,194	sd. sh. drlg.
K.N.D.A., No. 27-8-Q, Kettleman North, Kings	6-22-18	6,532	br. sh. drlg.
K.N.D.A., No. 58-8-Q, Kettleman North, Kings	8-22-18	6,418	br. sh. drlg.
K.N.D.A., No. 27-16-Q Kettleman North, Kings	16-22-18	8,442	sd. sh. drlg.
K.N.D.A., No. 38-16-Q Kettleman North, Kings	16-22-18	5,199	br. sh. drlg.
K.N.D.A., No. 43-20-Q Kettleman North, Kings	20-22-18	8,690	gr. sd. drlg.
K.N.D.A., No. 27-22-Q Kettleman North, Kings	22-22-18	8,060	hd. sd. drlg.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	10,836	flow gas
Standard Oil, No. 78-1-P, Kettleman North, Kings	1-22-17	8,040	flow 926 b.d.
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	7,396	sd. sh. drlg.
Standard Oil, No. 74-7-Q, Kettleman North, Kings	7-22-18	8,895	completing
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	4,271	sd. sh. drlg.
Standard Oil, No. 61-21-Q, Kettleman North, Kings	21-22-18	6,480	sd. sh. drlg.
Irving, A. R., No. 1 Bisconer, Dudley Ridge, Kings	11-24-20	1,650	will deepen
Tri-Counties Oil, No. 1, Alpaugh, Kings	10-23-22	7,601	deepening
Crusaders Oil, No. 1 Ducor, Tulare	1-24-27	790	sd. sh. drlg.
Texas Co., No. 1 Lewis, King City, Monterey	13-19-5	1,872	cleaning out

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Cal. Pet. Prod., No. 1 Jobe, Elkhorn, San Luis Obispo	6-10-24	2,140	sd. sh. drlg.
Cal. Pet. Prod., No. 1 Irons, Elkhorn, San Luis Obispo	19-10-24	2,097	sd. sh. drlg.
Vanguard Oil, No. 1 Creston, San Luis Obispo	26-27-14	4,564	sd. sh. drlg.
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	5,354	sd. sh. drlg.
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20-2	5,860	sd. sh. drlg.
Amerada Pet., No. 1 California Lands, Colusa, Colusa	34-16-1	6,013	sd. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4-1	3,373	fish lines

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Sovereign Oil, No. 2 Community, El Segundo, L. Ang.	12- 3-15	6,798	sd. sh. drlg.
Sovereign Oil, No. 1 Coppinger, El Segundo, L. Ang.	12- 3-15	5,992	sd. sh. drlg.
Rolling Hills Oil, No. 1 Weston, Palos Verdes, L. Ang.	27- 4-14	5,103	sd. sh. drlg.
Gypsy Oil, No. 16 Getty, Torrance, Los Angeles	14- 4-14	5,008	rig to pump
Allison & Oglesby, No. 2 Garner, Torrance, Los Ang.	14- 4-14	3,870	will deepen
Bergseid & Clark, No. 1 Basin, Torrance, Los Angeles	23- 4-14	3,783	will deepen
Blue Bell Pet., No. 1 Simons, Torrance, Los Angeles	23- 4-14	3,265	sd. sh. drlg.
Caldale Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,640	sd. sh. drlg.
Collier, P. V., No. 1 Smith, Torrance, Los Angeles	23- 4-14	3,605	will deepen
Consolidated Pet., No. 3, Torrance, Los Angeles	23- 4-14	2,274	sd. sh. drlg.
Cal. Star Oil, No. 1 Whitacre, Torrance, Los Angeles	23- 4-14	3,772	will deepen
Coast Line Oil, No. 2 Barto, Torrance, Los Angeles	23- 4-14	4,990	pump water
Camp, C. W., No. 13, Torrance, Los Angeles	23- 4-14	4,965	pump 130 b.d.
Cal-Oak Oil, No. 1 Devils, Torrance, Los Angeles	23- 4-14	4,921	sd. sh. drlg.
Calridge Oil, No. 1 Meyer, Torrance, Los Angeles	23- 4-14	5,012	P. B. 4,994
Dunphy, S. R., No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,815	sd. sh. drlg.
Elexico Oil, No. 3 Allen, Torrance, Los Angeles	23- 4-14	1,765	sd. sh. drlg.
Eriksson, G., No. 3 Fortuna, Torrance, Los Angeles	23- 4-14	4,171	redrlg. 2,997
Falma Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,398	sd. sh. drlg.
Fiat Oil, No. 1 Seeple, Torrance, Los Angeles	23- 4-14	2,158	sd. sh. drlg.
Freeman Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,290	sd. sh. drlg.
H. D. Oil Co. No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigging up
Jewel Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,898	sd. sh. drlg.
Kenber Oil, No. 1 Berken, Torrance, Los Angeles	23- 4-14	3,795	cleaning out
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	4,853	sd. sh. drlg.
Kirk, W. A., No. 12 Lomita, Torrance, Los Angeles	23- 4-14	4,899	sd. sh. drlg.
Kiesau & Ford, No. 1 Rhoads, Torrance, Los Angeles	23- 4-14	4,997	pump 220 b.d.
Kovell Oil, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	2,392	sd. sh. drlg.
Lomita Drlg., No. 1 Hogan, Torrance, Los Angeles	22- 4-14	4,985	tested wet
McCowan, C. T., No. 1-A Lindis, Torrance, Los Ang.	23- 4-14	5,165	pump 210 b.d.
Maldum Oil, No. 1 R. K., Torrance, Los Angeles	23- 4-14	3,770	cleaning out
Morton & Elder, No. 1 Ritzer, Torrance, Los Angeles	22- 4-14	4,580	sd. sh. drlg.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	23- 4-14	3,595	will deepen
McDonald & Burns, No. 2 Moore, Torrance, Los Ang.	23- 4-14	4,975	rig to pump
McDonald & Burns, No. 9 Moore, Torrance, Los Ang.	23- 4-14	4,886	sd. sh. drlg.
McDonald & Burns, No. 10 Moore, Torrance, Los Ang.	22- 4-14	3,496	sd. sh. drlg.
McCaslin, W. E., No. 2, Torrance, Los Angeles	14- 4-14	4,993	sd. sh. drlg.
McWherter, C. L., No. 1 Lomita, Torrance, Los Ang.	23- 4-14	4,386	sd. sh. drlg.
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	23- 4-14	4,098	sd. sh. drlg.
Moon Oil, No. 2 Julian, Torrance, Los Angeles	23- 4-14	3,787	rigging up
O'Donnell, J. L., No. 42 Lomita, Torrance, Los Ang.	23- 4-14	4,965	O. S. drlg.
Oil Dev. Corp., No. 1 Dunphy, Torrance, Los Angeles	23- 4-14	1,280	sd. sh. drlg.
Pennsylvania Oil, No. 1 Lomita, Torrance, Los Ang.	23- 4-14	2,571	sd. sh. drlg.
Pacific West. Oil, No. 2 Marble, Torrance, Los Ang.	15- 4-14	4,799	sd. sh. drlg.
Peters Royalty, No. 2, Torrance, Los Angeles	14- 4-14	5,002	flow 340 b.d.
Packard Pet., No. 3 Kelley, Torrance, Los Angeles	22- 4-14	4,920	sd. sh. drlg.
Packard Pet., No. 4 Kelley, Torrance, Los Angeles	22- 4-14	1,958	sd. sh. drlg.
Packard Pet., No. 6 Silver, Torrance, Los Angeles	23- 4-14	2,473	sd. sh. drlg.
Rico Oil, No. 1 Victoria, Torrance, Los Angeles	23- 4-14	4,975	rig to pump
Standard Oil, No. 1-12 Marble, Torrance, Los Angeles	22- 4-14	4,281	cleaning out
Standard Oil, No. 1-13 Marble, Torrance, Los Angeles	22- 4-14	3,810	rigged up
Star Pet., No. 2 G & A, Torrance, Los Angeles	23- 4-14	4,861	redrlg. 4,690
Star Pet., No. 1 Patton, Torrance, Los Angeles	23- 4-14	2,486	sd. sh. drlg.
Star Pet., No. 1 Schatz, Torrance, Los Angeles	23- 4-14	4,687	sd. sh. drlg.
Sol Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,202	P. B. 5,144
Sonwell Oil, No. 4, Torrance, Los Angeles	23- 4-14	4,591	sd. sh. drlg.
Silver Strand Oil, No. 1, Torrance, Los Angeles	22- 4-14	4,985	flow 1,170 b.d.
Ter Heun Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	2,998	sd. sh. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14- 4-14	5,026	cleaning out
Texas Co., No. 12 Wilson, Torrance, Los Angeles	22- 4-14	4,915	O. S. drlg.
Imperial Gypsum, No. 2 Getty, Torrance, Los. Ang.	14- 4-14	5,060	tested wet t
Imperial Gypsum, No. 3 Getty, Torrance, Los Ang.	14- 4-14	3,747	rigged up
Wertalla, Henry, No. 1 Lomita, Torrance, Los Ang.	23- 4-14	4,960	sd. sh. drlg.
Wilton Oil, No. 5, Torrance, Los Angeles	22- 4-14	4,896	sd. sh. drlg.
Woolner Oil, No. 4 Lomita, Torrance, Los Angeles	15- 4-14	4,986	flow 55 b.d.
Young & Bryan, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,684	sd. sh. drlg.
C. C. M. O. Co., No. 8, Torrance, Los Angeles	15- 4-14	4,160	redrlg. 4,000
C. C. M. O. Co., No. 16, Torrance, Los Angeles	14- 4-14	4,582	sd. sh. drlg.
Calif. Star Oil, No. 1 Lermens, Harbor City, Los Ang.	25- 4-14	2,080	sd. sh. drlg.
Calif. Star Oil, No. 1 O'Brien, Harbor City, Los Ang.	25- 4-14	1,953	sd. sh. drlg.
Isco Pet., No. 1 Block, Harbor City, Los Angeles	30- 4-13	4,171	sd. sh. drlg.
General Pet., No. 9 Poggi, Harbor City, Los Angeles	30- 4-13	2,672	sd. sh. drlg.
Bush Oil, No. 1 Gimenez, Harbor City, Los Angeles	25- 4-13	2,640	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,550	redrlg. 7,180
Union Oil, No. 61 Callender, Dominguez, Los Angeles	32- 3-13	1,958	cmtd. 959
Union Oil, No. 62 Callender, Dominguez, Los Angeles	33- 3-13	8,220	sd. sh. drlg.
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33- 3-13	8,525	O. S. drlg.
Shell Oil, No. 96 Reyes, Dominguez, Los Angeles	33- 3-13	2,050	cmtd. 961
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3- 4-13	4,294	will redrl.
Barnsdall Oil, No. 5 Trust, Rosecrans, Los Angeles	18- 3-13	6,794	sd. sh. drlg.
Barnsdall Oil, No. 9 Rosecrans, Rosecrans, Los Ang.	20- 3-13	7,857	flow 1,620 b.d.
Union Oil, No. 21 Rosecrans, Rosecrans, Los Angeles	19- 3-13	7,845	swabbing
Union Oil, No. 22 Rosecrans, Rosecrans, Los Angeles	18- 3-13	7,875	flow 1,460 b.d.
Union Oil, No. 24 Rosecrans, Rosecrans, Los Angeles	19- 3-13	2,693	sd. sh. drlg.
Universal Consd., No. 5 Trust, Rosecrans, Los Ang.	18- 3-13	1,170	sd. sh. drlg.
Superior Oil, No. 9 Maxwell, Rosecrans, Los Angeles	20- 3-13	7,280	sd. sh. drlg.
H. B. Oil, No. 1 Stevens, Rosecrans, Los Angeles	20- 3-13	6,033	will deepen
Tide Water A., No. 1 Porter, San Fernando, Los Ang.	27- 3-16	3,071	hd. sd. drlg.
West Coast Oil, No. 2 Newhall, Los Angeles	27- 4-16	2,590	deepening
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8- 4-17	1,028	sd. sh. drlg.
General Pet., No. 39 Harbor, Wilmington, Los Ang.	2- 5-13	2,260	sd. sh. drlg.
General Pet., No. 43 Harbor, Wilmington, Los Ang.	2- 5-13	2,620	sd. sh. drlg.
General Pet., No. 1 P.E., Wilmington, Los Angeles	2- 5-13	4,100	O. S. drlg.
Allied Pet., No. 22, Wilmington, Los Angeles	33- 4-13	2,505	sd. sh. drlg.
Burns Oil, No. 1, Wilmington, Los Angeles	32- 4-13	3,671	pump 185 b.d.
Crail Bros., No. 1 Mackallister, Wilmington, Los Ang.	33- 4-13	5,750	P. B. 5,560
Colter, B. T., No. 6 Colter, Wilmington, Los Angeles	32- 4-13	2,945	sd. sh. drlg.
Hancock Oil, No. 12-B, Wilmington, Los Angeles	2- 5-13	3,690	sd. sh. drlg.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2- 5-13	4,192	P. B. 4,065
Hancock Oil, No. 25-C, Wilmington, Los Angeles	2- 5-13	2,187	sd. sh. drlg.
Hancock Oil, No. 7-D, Wilmington, Los Angeles	2- 5-13	3,025	flow 251 b.d.
O'Kane & Brain, No. 1 L.B.H.P., Wilmington, L. A.	2- 5-13	2,560	sd. sh. drlg.
O'Kane & Brain, No. 2 L.B.H.D., Wilmington, L. A.	2- 5-13	2,910	flow 235 b.d.
Richfield Oil, No. 1-P.D., Wilmington, Los Angeles	2- 5-13	4,385	flow. 2,040 b.d.
Richfield Oil, No. 4-P.D., Wilmington, Los Angeles	2- 5-13	4,241	sd. sh. drlg.
Richfield Oil, No. 7-P.D., Wilmington, Los Angeles	2- 5-13	4,235	flow 1,250 b.d.
Richfield Oil, No. 8-P.D., Wilmington, Los Angeles	2- 5-13	3,620	flow 996 b.d.
Richfield Oil, No. 9-P.D., Wilmington, Los Angeles	2- 5-13	3,636	sd. sh. drlg.
Richfield Oil, No. 3-P.G., Wilmington, Los Angeles	2- 5-13	4,443	redrlg. 3,480
Royalty Service, No. 7-A, Wilmington, Los Angeles	32- 4-13	1,874	sd. sh. drlg.
Tide Water A. No. 1 Banning, Wilmington, Los Ang.	29- 4-13	6,761	P.B. 3,485
Universal Consd., No. 1 Newport, Wilmington, L. A.	2- 5-13	4,100	flow 4,990 b.d.
Union Pacific, No. 85, Wilmington, Los Angeles	3- 5-13	3,997	flow 495 b.d.
Union Pacific, No. 87, Wilmington, Los Angeles	3- 5-13	3,955	O. S. drlg.
Union Pacific, No. 88, Wilmington, Los Angeles	4- 5-13	2,096	sd. sh. drlg.
Union Pacific, No. 89, Wilmington, Los Angeles	4- 5-13	2,641	sd. sh. drlg.
Union Pacific, No. 3-P.D., Wilmington, Los Angeles	3- 5-13	3,789	flow 400 b.d.
Wilbur, V. R., No. 3 S. F., Wilmington, Los Angeles	33- 4-13	3,714	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2- 2-12	5,600	flow 1,450 b.d.
St. Helens Pet., No. 29 Monterey, Montebello, L. A.	2- 2-12	1,967	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2- 2-12	5,710	O. S. drlg.
Union Oil, No. 2 Wilcox, Montebello, Los Angeles	2- 2-12	3,052	sd. sh. drlg.
Union Oil, No. 2 Paul Howard, Montebello, Los Ang.	2- 2-12	5,397	sd. sh. drlg.
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2- 2-12	6,274	O. S. drlg.
West Mon. Oil, No. 2 Seavers, Montebello, Los Ang.	2- 2-12	5,523	sd. sh. drlg.
Mon. Wesco, Inc., No. 1 Seavers, Montebello, Los Ang.	2- 2-12	2,470	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, Los Ang.	2- 2-12	6,254	sd. sh. drlg.
Mont. Res. Oil, No. 1 M. L. & W., Montebello, L. A.	2- 2-12	1,871	sd. sh. drlg.
McVicar & Rood, No. 2 Manz, Montebello, Los Ang.	2- 2-12	6,259	recmtd. 6,202
Brookline Oil, No. 1 Drake, Montebello, Los Ang.	2- 2-12	6,444	flow 395 b.d.
Security L. & W., No. 1 Tobey, Whittier, Los Angeles	8- 2-11	1,781	hd. sd. drlg.
Hilldon Oil, No. 4-B-P, North Long Beach, Los. Ang.	13- 4-13	2,382	sd. sh. drlg.
Johnston Drlg., No. 34, Long Beach, Los Angeles	13- 4-13	4,552	flow 120 b.d.
Apex Pet., No. 10 Signal, Long Beach, Los Angeles	19- 4-12	1,798	sd. sh. drlg.
Texas Co., No. 2-3 Foster, Long Beach, Los Angeles	19- 4-12	4,260	sd. sh. drlg.
De Soto Oil, No. 1, Long Beach, Los Angeles	30- 4-12	5,593	sd. sh. drlg.
Texas Co., No. 3 Alamitos, Seal Beach, Orange	3- 5-12	5,225	sd. sh. drlg.
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2- 3-10	5,064	P. B. 4,988
Battersby, J. M., No. 1 Carmenita, Orange	21- 3-11	7,055	hd. sh. drlg.
Severns Drlg., No. 1-A McNally, West Coyote, Orange	24- 3-11	4,598	sd. sh. drlg.
Standard Oil, No. 3 Bastanchury, West Coyote, Orange	16- 3-10	1,272	sd. sh. drlg.
Alford Dev., No. 1 Yorba, Richfield, Orange	29- 3-9	3,583	idle
Shell Oil, No. 1 Cuff, Richfield, Orange Co.	29- 3-9	3,086	P. B. 2,528
Shell Oil, No. 1 Swain, Richfield, Orange	28- 3-9	2,533	wet; abd.
Shell Oil, No. 1 Hemphill, Richfield, Orange	30- 3-9	3,081	dry; abd.
Beth Oil, No. 1 Dillingham, Yorba, Orange	21- 3-9	2,338	rig to pump
Richfield Consd. Oil, No. 2 Todd, Yorba, Orange	21- 3-9	1,744	sd. sh. drlg.
A. V. Oil, No. 1, Costa Mesa, Orange	16- 6-10	4,640	sd. sh. drlg.
Congress Oil, No. 1, Santa Ana, Orange	36- 3-9	2,980	pump 120 b.d.
So. Counties Oil, No. 1 Serrano, San Bernardino	22- 2-8	530	sd. sh. drlg.

KANSAS

Week Ending August 13 (Descriptions are East unless marked otherwise)

Barton County

Crown Pet. Corp. No. 1 Wolf, SE SW SE sec. 36-19-12w. T.D. 3,374 ft.; acd. and pmp. 10 B.O.P.H.; grav. 39.

Gardner & Murfin No. 1 Krug, SW SE sec. 16-16-13w. T.D. 3,415 ft.; acd. and 100 ft. W.I.H.; 50% S.W.; bailed 1½ B.O. and 1½ B.W.P.H.; D.&A.

Butler County

Virgil Hicks No. 1 Heyman, NW SW NW sec. 33-23-5. Simp. 2,607 ft.; Arb. 2,666 ft.; T.D. 2,700 ft.; D.&A.

National Ref. No. 1 Wentz, SE NE NW sec. 7-27-6. T.D. 3,211 ft.; Arb. 3,199 ft.; D.&A.

Pryor & Lockhart No. 1 Lietzke, NE SW NW sec. 24-28-7. Drlg. 1,150 ft.

Roy Ramsey No. 2 fee, NE NE sec. 28-16-3w. Drlg. 1,355 ft.

Simpson Oil No. 1 Equitable Life Ins., SW sec. 15-25-3. T.D. 2,784 ft.: U.R.

Soloman & Alexander No. 1 Sawyer, SW NW SW sec. 2-28-7. Drlg. 103 ft.

Cowley County

McKnob et al No. 1 O'Neil, NW NW SE sec. 27-32-3. Drlg. 1,000 ft.; approx.

Ellis County

Carter Oil No. 1 Sottschalk, NW SE sec. 36-15-18w. T.D. 3,477 ft.; D.&A.

C. B. Davis No. 1 Smith, SW NW NE sec. 11-12-16w. Rng. csg. at 3,330 ft.

Ford County

Sinclair Prairie Oil Co. No. 1 Young CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.: Wilcox 5,617 ft.; Arb. 5,629 ft.; T.D. 5,930 ft.: P.B. 5,025 ft.; flwd. 56 B.F. in 8 hrs.; S.I.

Greenwood County

Z. Dunaip et al No. 1 Warren, NW NW SW sec. 4-28-10. Drlg. 790 ft.

Fullerton et al No. 1 Bates, NE SW SE sec. 32-26-11. Drlg. 20 ft.

Ward McGinnis No. 3 Smith, NW NE NE sec. 10-24-13. Drlg. 530 ft.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE sec. 10-27-10w. Arb. 4,488 ft.; T.D. 4,529 ft.; P.B. to Miss. at 4,028 ft.; set csg.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW sec. 7-19-2w. S.D. 1,850 ft.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW sec. 24-17-4. Drlg. 1,710 ft.

Harwood Oil Co. No. 1 Kaufman, NW NW SE sec. 27-17-4. Fsg. 1,240 ft.

Mead County

Cragin, Reeuscher & Turner No. 1 Adams, NW NW SE sec. 22-34-30w. T.D. 200 ft.; R.U.R.

Pacific Midwest Oil No. 1 Rexford, NE SE SW sec. 8-30-29w. Drlg. 1,250 ft.

Ness County

Sinclair-Prairie No. 1 McKinley "A," SW NW sec. 26-18-26w. Drlg. 1,610 ft.

Norton County

Vickers Pet. Co. No. 1 Bozarth, C SW SW sec. 15-5-24w. W.O.C. 414 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW sec. 18-10-2w. Drlg. 1,965 ft.

Reno County

Carter Oil Co. No. 8 Hogan, NW SE SW sec. 19-24-42. Drlg. 340 ft.

L. E. Douglas et al No. 1 Durand SE SE SW sec. 3-23-5w. S.D. 3,600 ft.

Rice County

Cities Service No. 1 Flora, SW SW NE sec. 12-19-10w. Drlg. 2,985 ft.

Cities Service No. 1 Frees, CL S½ NW sec. 20-18-9w. Drlg. 2,490 ft.

Duwe & Farris No. 1 Remmert, SW NW sec. 3-18-9w. Arb. 3,289 ft.; T.D. 3,341 ft., W.I.H.; D.&A.

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. Drlg. 3,357 ft.

Rooks County

Fred Haines et al No. 1 Don, SE SE SW sec. 13-9s-16w. Rng. csg. 3,257 ft.

J. J. Hall No. 1 Kruse, SE NE sec. 3-10-16w. T.D. 3,126 ft.; P.B. 3,110 ft.; pmp. 45 B.O. and 45 B.W. in 24 hrs.; drlg. 3,194 ft.

Power-Olson Oil Co. No. 1 Hammond, C SW sec. 34-6-19w. T.D. 3,725 ft.; D.& A.

Producers Oil No. 1 Ham, SW NW sec. 25-7-19w. S.D. 1,800 ft.

Rush County

Phillips Pet. Co. No. 1 John Kees, C SE SE sec. 3-19-20w. T.D. 2,500 ft.; S.D. for csg.

Russell County

Coralena No. 1 Hefferman, NE SE SW sec. 34-14-13w. T.D. 3,026 ft.; pmpd. 162 B.O. first 4 hrs. and 134 B.O. second 4 hrs.; comp.

J. J. Hall No. 1 Landon, SW SE sec. 11-15-14w. T.D. 3,100 ft.; 1,800 ft. O.I.H.; W.O.C.

Geo. Hinkle No. 1 Kaufman, SE NW sec. 10-15-12w. Drlg. 2,385 ft.

R. H. Shields No. 1 Anschutz, SW SE sec. 2-14-13w. Drlg. 3,362 ft.

Stearns No. 1 Stielow, NW cor. sec. 32-11-14w. S.D. 3,075 ft.

Saline County

Sullivan & Sidwell No. 1 Erickson, NE NE sec. 28-16-3w. W.O.C. 301 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. T.D. 2,285 ft.; S.D.

Natl. Ref. No. 1 Trustee, SE NE sec. 8-27-2. T.D. 3,258 ft.; perf. and pmpd. 37 B.O. and 5 B.W. in 5 hrs.; pot. 420 B.O.P.D.; comp.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. S.D. 3,550 ft.

Stafford County

Atlantic Ref. Co. No. 1 Wise, NW cor. sec. 13-24-14w. Swb. 38 B.O. first hr.;

1,600 ft. O.I.H. in 18 hrs.; est. 6,000,000 ft. gas; S.I.

Cities Service No. 1 Smith, CWL SW sec. 16-21-11w. T.D. 3,412 ft.; pmpd. 102 B.O. first 4 hrs. and 68 B.O. second 4 hrs.; pot. 412 B.O.P.D.; comp.

Newbold & Springrose No. 1 Walker, NE NE SW sec. 24-24-12w. W.O.C. 258 ft.

H. L. Rowley No. 1 Sittner, SE SE NE sec. 35-21-12w. Drlg. 3,035 ft.

Woodson County

Joe Nathan No. 1 Ellis, NW NW SE sec. 35-25-14. Drlg. 1,080 ft.

OKLAHOMA

Week Ending August 13

NORTHERN OKLAHOMA

Beckham County

Wagner & Stogner No. 1 McGee, NE NE SE sec. 25-8-22w. O.W.D.D.; T.D. 1,029 ft.; C.O. at 1,007 ft.

Coal County

Carter et al No. 1 Mote, C E½ SW NW sec. 19-2-10. Drlg. 5,963 ft.

Comanche County

E. N. Eldridge No. 1 Aetna Life, SW SE SW sec. 2-1-10w. Fsg. 450 ft.

Midnite O. & G. Co. No. 1 Howe, NW NW NW sec. 20-2n-12w. Drlg. 550 ft.

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1-13w. Drlg. 734 ft.

Garfield County

I.T.I.O. No. 1 Kechin, C SE SE sec. 17-22-5w. Drlg. 5,200 ft.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE sec. 13-7-8. T.D. 1,160 ft.; S.D.

Kay County

Champlin Ref. Co. No. 1 Boehm, SW SW NE sec. 24-27-4. T.D. 6,020 ft.; fsg.

Clark C. Nye No. 1 Willin, SE SE SW sec. 24-27-4. Cg. 3,016 ft.; S.S.O.&G.; S.D. for mach.

Louis Blosser No. 1 Rudolph, NE NE SW sec. 27-29-1w. T.D. 3,086 ft.; S.D. repairs.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE sec. 14-6n-17w. Drlg. L. 1,781 ft.

Hughes & Reese No. 1 Fultz, SE SE SE sec. 10-6-18w. T.D. new hole 1,238 ft.; drlg. by tools.

Lincoln County

British-American No. 1 Markwell, C E½ E½ NE sec. 26-12-4. Drlg. 3,970 ft.

Indian States No. 1 Bailey, NW NW NE sec. 2-12-5. T.D. 4,238 ft.; swb. est. 7 B.O.P.H. and 250,000 ft. gas; S.I. for tanks.

Noble County

H. R. Hollenback No. 1 Mathews, C SW NW sec. 9-20-1. Drlg. 3,168 ft.

Okfuskee County

Amerada No. 1 Conard, NE NW SW sec. 33-10-10. Crom. 3,276 ft.; Misener 3,741 ft.; Viola 3,962 ft.; some oil; drlg. 3,996 ft.

Oklahoma County

Fain Drlg. No. 1 Little, SW SW NE sec. 28-11-3w. Dolo. 6,765 ft.; second Wilcox 6,952-74 ft., T.D.; rng. Schlumberger.

Olson Oil No. 1 L. Vaneck, SE SW NW sec. 4-12-3w. T.D. 6,749 ft.; cmtg. csg.; S.S.O.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. Drlg. Miss. L. 3,330 ft.

Norbla Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. T.D. 2,784 ft.

Payne County

Sinclair-Prairie No. 1 McQuain, NE NW NE sec. 22-19-1. Miss. 4,585 ft.; T.D. 4,594 ft.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2-15. T.D. 1,040 ft.; S.D.

Pontotoc County

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rlp in csg.; P.B. 4,090 ft.; S.D.

H. Z. Moore No. 1 Payne, SE NW SE sec. 16-4-4. T.D. 997 ft.; S.S.O.; tstg.

Pierce & Morgan No. 1 Kroeger, SE NE SW sec. 30-5-7. T.D. 2,375 ft.; D.&A.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,013 ft.; S.D.

Pottawatomie County

Atlantic Ref. Co. No. 1-A McCurry, NW NE SW sec. 6-6-4. Pay 4,204 ft.; T.D. 4,208 ft.; flwd. 176 B.O. in 18 hrs.; rng. tbg.

Geo. L. Pace No. 1 Riley, NE NE SE sec. 2-9-3. Drlg. 120 ft.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW sec. 8-5n-7. Drlg. 1,955 ft.

Burk-Greis No. 1 Blevins, SW NW SW sec. 28-10-7. T.D. 2,673 ft.; D.&A.

Indian States et al No. 1 Johnson, NE SE NE sec. 2-6-5. T.D. 3,004 ft.; P.B. 2,850 ft.; D.&A.

Young & Newsom No. 1 Edgeman, SE SE SE sec. 17-7-6. Wilcox 4,378-80 ft.; T.D.; pmpd. 293 B.O. in 11½ hrs.; tstg.

Washita County

Continental Oil Co. No. 1 Proctor, C NW sec. 28-10-20w. Drlg. 290 ft.

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. by tools to 2,172 ft.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. Arb. 2,843 ft.; drlg. 3,435 ft.; H.F.W.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW sec. 21-7s-15. T.D. 905 ft.; tstg.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody NE cor. sec. 35-6s-2w. Drlg. sh. 6,100 ft.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. Drlg. 2,180 ft.

ARKANSAS

Calhoun County

C. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13. T.D. 10 ft.; S.D.; clearing titles.

Cleveland County

W. E. Allaum, Tr., No. 1 Moore Est., SW cor. SE NW sec. 34-9-10. Set 10¾-in. 170 ft.; cg. 1,760-86 ft.

Columbia County

Atlantic Ref. Co. No. 1 Baker, C SE NW sec. 13-17-20. Drlg. 3,816 ft.

Atlantic Ref. Co. No. 1 Harrington, C SW NW sec. 14-17-20. Top anhy. 3,149 ft.; bttm. anhy. 3,235 ft.; drlg. 4,941 ft.

Fohs Oil Co. No. 1 Phillips, C NW SW sec. 15-17-19. D.S.T. 7,357-89 ft.; 15½ min.; ¼-in. cks. top and bttm.; rec. 15 ft. oil and 100 ft. S.W.; 275 ft. drlg. fluid; W.P. 600 lbs.; rmd. to 7,383 ft.; D.S.T. 7,383-89 ft.; 35 min.; ⅝-in. cks. top and bttm.; rec. 2,500 ft. oil, 360 ft. mud and 120 ft. S.W.; set 7-in. csg. 7,412 ft.; T.D. 7,424 ft.; perf. 7,380-85 ft.; D.S.T.; set pkr. 7,375 ft. open at top; ¼-in. ck. on bttm.; flwd. S.W. and very slight S.O. after 51 min.; flwd. for 45 min.; S.W.; recmtd. csg. to reperf. higher; set 7-in. 7,412 ft.; W.O.C.

Pet. Finance Co. No. 1 Baker, C SW NW sec. 13-17-20. Drlg. 2,306 ft.

Standard Oil Co. of La. No. 1 T. Crumpler, sec. 15-17-19. Cg. 7,447 ft.; top por. oolitic L. 7,380 ft.; drlg. 7,500 ft.

Standard Oil Co. No. 1 E. D. Harris, R.U.

Standard Oil Co. of La. No. 3 McKean, NE SE sec. 7-16-22. Set 6-in. csg. 7,205 ft.; T.D. 7,257 ft.; set 6-in. 7,205 ft.

G. H. Vaughn No. 1 Garrett, C NE SE sec. 14-17-20. Drk.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. N line, 80 ft. E line, sec. 35-14n-3e. M.I.C.T. 1,754 ft.

Crittendon County

Stanley Oil Corp. No. 1 Danner hrs., O.W.W.O.; old T.D. 2,790 ft.; rng. 4-in. csg. to set on bttm.; will use 1 jt. perf. csg. 3,219-3,176 ft.; T.D. 3,351 ft.

Lafayette County

Standard Oil Co. of La. No. 1 J. L. Warren, 1,980 ft. E line, 610 ft. N line, sec. 18-16-22. Top anhy. 3,279 ft.; T.D. 7,254 ft., L.; acdzd. with 5,000 gal.; swbg.

Little River County

M. E. Sanderson No. 1 Pinny; O.W.W.O.; reported abd. 1,300 ft.; NE cor. NE SW sec. 6-13-30. S.D. 1,324 ft.

Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 3,225 ft.

Miller County—Rodessa

F. W. Burford No. 1 Mitchell. Drlg. 4,560 ft.

F. W. Burford No. 1 H. C. Mitchell, NW cor. NW NE sec. 11-20-28. Drlg. L.& anhy. 5,827 ft.; last report.

Hill & Eastabrook No. 1 Sherman, SW NW sec. 29-19-28. Drlg. L.&anhy. 5,790 ft.; last report.

Red River Valley Oil Co. No. 1 Beck, sec. 34-15-26. Drlg. 3,380 ft.

Nevada County

Texas Canadian Oil Corp. No. 1 Stocks, C NW SE sec. 9-15s-22w. Drlg. 50 ft.

Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. mud, S.W. and oil 1,198-1,214 ft.; 30 min.; W.O.; T.D. 1,214 ft. set 6-in. csg. 1,198 ft.; swbd. est. 10 bbls. oil; S.D. 1,214 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. S.D. 905 ft.

A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. T.D. 2,900 ft.; lost circ.; P.B. surf.; S.D. 3,110 ft.

Union County—Schuler

Atlantic Ref. Co. No. 1 Rogers, sec. 16-18-17. Set 7-in. 7,621 ft.

Crescent Drlg. Co. No. 1 Lewis, SE SW sec. 16-18-17. Drlg. 2,100 ft.; last report.

Crescent Drlg. No. 1 Sewell. R.U.

E. M. Jones No. 1 C. H. Murphy, NW cor. Lot 6, NW sec. 19-18-17. O.W.D.D.; drlg. rd.&gr. sh. 6,438 ft.; last report.

E. M. Jones No. 2 Rogers, SW SW sec. 16-18-17. Cg. 7,660 ft.

Lion Oil Ref. Co. No. 2 Clarence. R.U.

Lion Oil Ref. Co. No. 1 Dee, sec. 17-18-17. T.D. 7,725 ft.

Lion Oil Ref. No. 2 "D." Set 16-in. 125 ft.

Lion Oil Ref. Co. No. 2 Marcus, 330 ft. SE cor. Lot 3, SE sec. 18-18-17. Top Jones sd. 7,521 ft.; top L. 7,621-89 ft.; set 7-in. csg. 7,713 ft.; T.D. 7,720 ft.

Lion Oil Ref. Co. No. 3 Marcus, SW cor. Lot 5, NW sec. 18-18-17. Drlg. rd. sdy. sh. 7,517 ft.; last report.

Lion Oil Ref. Co. No. 4 Marcus, NW cor. Lot 3, SW sec. 18-18-17. Drlg. 6,333 ft.

Lion Oil Ref. Co. No. 2 Marine Oil Co., SE cor. Lot 1, SW sec. 7-18-17. Drlg. 3,485 ft.; last report.

Lion Oil Ref. No. 4 Marine. Loc.

Lion Oil Ref. No. 6-A Morgan. Set 16-in. 118 ft.

Lion Oil Ref. Co. No. 1 Natl., NW cor. NE SW sec. 17-18-17. Drlg. 5,435 ft.

Lion Oil Ref. Co. No. 2 Nelson, Lot 5, sec. 18-18-17. Drlg. 5,023 ft.

Lion Oil Ref. Co. No. 1 H. P. Sewell, NE cor. Lot 4, NW sec. 18-18-17. Set 10¾-in. csg. 1,902 ft.; drlg. 4,434 ft.

Marine Oil Co. No. 2 J. H. Calloway, NW cor. E½ SE NE sec. 13-18-18. Set 16-in. csg. 142 ft.; T.D. 152 ft.

Phillips Pet. Co. No. 1 Miller, NE cor., Lot 4, SW sec. 18-18-17. Drlg. 7,064 ft.

Phillips Pet. Co. No. 1 Sewell, SW cor., Lot 5, SW sec. 7-18-17. Drlg. 7,214 ft.

Roberts & Murphy No. 2 C. D. Justiss, NW cor. Lot 6, SW sec. 7-18-17. R.U.

Roberts & Murphy No. 2 Justiss. Set 16-in. 120 ft.; 10-in. 1,782 ft.

Union County—Other

J. R. Lockhart No. 1 Raulston, sec. 12-17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.; cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,077 ft.; perf. 3,002-07 ft.; tstd. 2,750 ft. S.W.; reperf. 2,967-73 ft.; blew wild; est. 500 bbls. S.W.; P.B. 2,700 ft.; drld. out cmt. 2,980 ft.; perf. 2,968-76 ft.; set pkr. 2,960 ft.; tstd. 1,500,000 ft. gas; W.O.

Joe Modisette et al No. 2 Union Sawmill Co., sec. 8-18-12. T.D. 3,354 ft.; S.W. sd. 3,554-67 ft.; ran Schlumberger and set 9⅝-in. csg. 3,009 ft.; D.S.T. 5,900 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville County

DeSoto O. & G. Co. No. 1 Fleming, C NW NW sec. 18-16-9. Ran Schlum. 5,100 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. sec. 10-22-11. W.O.C. 80 ft.

C. H. French No. 1 Weaver, sec. 14-19-11. W.O.C. 377 ft.

Premier Inv. Co. No. 1 Community Corp., sec. 22-19-11. S.D. 310 ft.

Premier Inv. Co. No. 3 Connell, NE cor. SE SE sec. 15-19-11. T.D. 375 ft.; 20 B.O.P.D.

Premier Inv. Co. No. 4 Connell. R.U.

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Tstd. est. 1,000,000 ft. gas; S.I.; T.D. 2,374 ft.; top oolitic L. 2,345 ft.; set 5½-in. csg. 2,300 ft. without cmt.; set 7-in. csg. 2,026 ft. without cmt.; tstd. est. 1,000,000 ft. gas, S.S.O.; W.O.S.R. 2,384 ft.

Premier Inv. Co. No. 52 Wyche, NW cor. sec. 14-19-11. Set 10¾-in. csg. 96 ft.; W.O.S.R. 435 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. T.D. 780 ft.; set 5½-n. 778 ft.; trtd. with 1,000 gal. acd.; tstd. dry; T.D. 770 ft.

Triangle Drlg. Co. No. 1-A R. O. Roy, SW cor. NW sec. 18-17-11. W.O.C. 3,148 ft.

Caddo Parish

J. W. Bailey No. 2 Caddo Lvy. Bd., SE cor. sec. 36-21-16. R.U.

S. H. Caddisy No. 1 Caddo Lve. Bd. Loc.

Carney et al No. 1 Hart. Set 6-in. csg. 1,037 ft.; tstd. S.W. 1,038 ft.; T.D. 1,038 ft.; S.W. and abd.

J. E. Carroll et al No. 1 Stiles, SW cor. NE sec. 17-21-16. Set 6-in. csg. 1,009 ft.; W.O.S.R. 1,014 ft.

W. D. Chew No. 3 Stiles, sec. 33-21-16. Set 6-in. csg. 1,852 ft.; T.D. 1,985 ft.; 50 B.O.P.D.

Paul Cooper et al No. 1 Stiles, SE cor. NE NW sec. 33-21-16. Drlg. 1,000 ft.

J. P. Driscoll et al No. 4 Pender, sec. 11-20-15. Set 6⅝-in. csg. 2,192 ft.; T. D. 2,201 ft.; 50 B.O.P.D.

Falcon Oil Co. No. 2 Glassell-Youree, SE cor. sec. 26-20-15. W.O.C. 2,306 ft.

M. M. Ferrell No. 1 Dial. Drlg. 350 ft.

C. G. Gibbons No. 1-A State Lv. Bd., sec. 17-21-16. Set 8-in. csg. 1,015 ft.; W.O. S.R.

J. T. Humphrey No. 2 Caddo Lve. Bd. Loc.

McClanahan et al No. 1 Muslow, NE NW sec. 31-21-15. Set 10¾-in. csg. 40 ft.; S.D.

Magnolia Pet. Co. No. 27 Dillon Hrs., SW cor. NW sec. 24-21-15. T.D. 1,625 ft.; 25 B.O.P.D.

Midfield Oil Co. No. 5 Muslow, NW cor. SE SW sec. 6-20-15. Set 6⅝-in. csg. 1,335 ft.; used 3,000 gal. acd.; T.D. 1,560 ft.; 40 B.O.P.D.

Midfield Oil Co. No. 6 Muslow, NE cor. SE SW sec. 6-20-15. Set 10¾-in. csg. 96 ft.; W.O.C.; T.D. 1,453 ft.

Midfield Oil Co. No. 7 Muslow. Drk.

Midfield Oil No. 8 Muslow. Drk.

J. F. Mitchell No. 2 Muslow, sec. 31-21-15. Set 6-in. csg.; T.D. 1,649 ft.; 15 B. O.P.D.

J. Ober & Sons No. 1 fee, SE cor. sec. 36-21-16. R.U.

Oils, Inc., No. 1 Cazaux, sec. 10-16-13. Drlg. 2,450 ft.

Papadokis & Poppas No. 1 Spell. Drk.

J. E. Sedberry No. 1-A Dickinson, SW cor. sec. 10-19-14. Drlg. 2,410 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW sec. 17-20-15. O.W.W.O.; old T.D. 1,500 ft.; set 8-in. csg. 1,350 ft.; T.D. 1,860 ft.; W.O.S.R.

Southern Star Pet. Corp. No. 2 Muslow, NE cor. SE NW sec. 17-20-15. Drlg. sh. 888 ft.

Nat. Wiseman No. 3 Stiles, NW cor. SE SW sec. 27-21-16. Drlg. chk. 1,550 ft.

Nat Wiseman No. 4 Stiles. Drk.

Caldwell Parish

G. W. Ziegen No. 14 La. Central, SW cor. sec. 20-14-3e. S.D. 1,770 ft.

Claiborne Parish

Harry Fotiades No. 2 Whitman, C NW NW sec. 2-20-5. Por. L. 5,235-41 ft.; set 5½-in. csg. 5,225 ft.; T.D. 5,259 ft.; 60 B.O.P.D.

J. H. Henry No. 1 McDonald, NE cor. SE sec. 3-20-5. Drlg. 3,807 ft.

Lyons & Neely No. 1 Kilgore, C NW SE sec. 11-20-5. Tstg. 5,427 ft.

W. H. North No. 1 Lowery, C NE NW sec. 14-20-5. S.D.; W.O.; T.D. 5,327 ft.

Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5⅜-in. csg. 5,290 ft.; T.D. 5,313 ft.; set perf. lnr.; tstd. dry; washed with oil and acdz. with 2,000 gal. and 150 bbls. oil; swb. dry; think csg. seat gave away; recmt. csg.; cor. depth 5,270 ft.; cor. T.D. 5,357 ft.; tried to reacdz.; swbg. small S.O.; W.O.

H. O. Olson No. 1 L. L. Lowery. R.U.

Prairie O. & G. Co. No. 2 Lloyd, C SE NE sec. 10-20-5. Drlg. sh.&L. 4,993 ft.; last report.

Rodessa O. & R. Co. No. 1 Lloyd. W. O.C. 810 ft.

Sells Pet. Co. No. 1-B C. S. L. Patton, SE cor. NW sec. 12-20-5. T.D. 5,327 ft.; 8 B.O.P.D.

Sklar Oil Corp. No. 1 Lowery, C SW SW sec. 14-20-5. Drlg. 5,100 ft.

Texas Canadian Oil Co. No. 1-B Lowery, C NE NE sec. 14-20-5. Drlg. 4,860 ft.

Texas Canadian Oil Co. No. 1 Patton, C SW SW sec. 12-20-5. Drlg. 4,460 ft.

Union Prod. Co. No. 1-A Simms Unit, 660 ft.; S.W. cor. sec. 29-20-5. P.B. 5,630 ft.; set 9⅝-in. csg. 5,573 ft.; T.D. 6,050 ft.; 42,000,000 ft. gas dly.

Concordia Parish

Edw. Addy et al No. 1 Posternack, NW SW sec. 49-8n-9e. Drlg. 1,721 ft.

Morrison & Co. No. 1 Winston, sec. 43-7-9e. Fsg. 4,200 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 5-12-16. Drlg. 1,247 ft.

G. H. Collins et al No. 2 Joiner, sec. 28-11-12. W.O.C. 2,925 ft.

Paul Miller et al No. 2 Jal Drlg. Co., NE sec. 5-11-11. M.I.M.
Petroleum Heat & Power Co. No. 2 . Kavanaugh, NE cor. NW SW sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.
Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. S.D. 3,620 ft.

Grant Parish

C. R. Bowers No. 1 Harrison Est., sec. 21-8-5. S.D. 1,091 ft.
Rogers Prod. Corp. No. 3-A Holmes, SW cor. sec. 17-9n-1e. Set 4-in. csg. 82 ft.; drlg. 1,060 ft.

La Salle Parish

O. L. Black No. 1 Tullas. Drlg. 1,300 ft.
Cherie Oil Co. No. 1 Urania, NW cor. NW SW sec. 18-10-2e. D.&A. 1,529 ft.

Lincoln Parish

Harry Fotiades No. 2-B Patton, C NW SW sec. 7-20-4. Set 5½-in. csg. 5,335 ft.; T.D. 5,368 ft.; top por. L. 5,337 ft.; tstg. 5,368 ft.
Magnolia Pet. Co. No. 1 Fuller, C SE SW sec. 5-20-4. Set 7-in. csg. 5,357 ft.; acdzd. with 1,300 gal.; tstg. 5,371 ft.

Madison Parish

Continental Oil Co. No. 1 Singer Mfg Co., C NE NW sec. 3-15-11e. Drlg. 2,857 ft.

Morehouse Parish

Union Prod. Co. No. 2 Nadchous Sch. Lds. Loc.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., sec. 36-7n-9w. S.D. 510 ft.

Red River Parish

H. D. Rogers No. 3 Long Bell Lbr. Co., sec. 30-13-9. Set 6-in. csg. top Nacatoch 1,079 ft.; tstg. 1,119 ft.

Sabine Parish

Addison & Peterson No. 1 Dew, SE cor. SW SE sec. 22-8-11. R.U.
W. L. McClanahan No. 1 Frost Lbr. Co., sec. 22-9-13. D.S.T. 2,927-3,028 ft.; tstd. est. 1,000,000 ft. gas and 9 jts. mud; ¼-in. ck.; blew out 4,745 ft.; S.W., mud and gas; cd. hd. sh.&L. 4,745-54 ft.; S.D.; W.O. 5,710 ft.
Major Oil Co. No. 4 Bowman-Hicks, C NW SW sec. 7-7-12. W.O.C. 2,366 ft.
Harry N. Morris No. 1-B Irving & Bishop, C SW NW sec. 18-7-12. Aczd. with 2,000 gal.; tstg. dry 2,690 ft.
Hunter Co. No. 6 Bowman & Hicks. Loc.
Hunter Co. No. 1-A La. Long Leaf Lbr. Co., NE cor. sec. 19-7-12. T.D. 3,015 ft.; S.W. and abd.
Richards & Holloway No. 1 J. E. Bauer, SW cor. sec. 7-7-12. Drlg. 2,174 ft.
Richards & Holloway No. 1 Bowman & Hicks, Zwolle area. W.O.C. 86 ft.
C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE sec. 15-7-13. Tstg. S.W. 2,602 ft.
Sklar & Sugar No. 1 Procella, NW NE sec. 18-7-12. Set 7-in. csg. 2,478 ft.; tstg. small S.G. 2,908 ft.; P.B. 2,670 ft.; tstd. small S.O.&G.; tstd. S.W.; D. &A. 2,908 ft.
Smiddy & Watson No. 1 Sabine Lbr. Co., NW NE sec. 12-7-13. Set 10-in. csg. 60 ft.; 7-in. csg. 2,129 ft.; tstd. dry 2,352 ft.; 1,100 ft. O.I.H.; T.D. 2,580 ft.; 75 B.O.P.D.
H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE sec. 8-7-13. R.U.
Tropical Oil Co. No. 1 Long Bell Lbr. Co., sec. 5-8-13. W.O.C. 1,715 ft.
Voline Oil Co. No. 1 First Natl. Bnk., sec. 18-7-12. Top ch. 2,460 ft.; tstg. dry 2,975 ft.; W.O.
Lee Whitehurst No. 1 First Natl. Bnk. of Shreveport, sec. 14-7-13. Set 10-in. 82 ft.; set 7-in. csg. 2,152 ft.; S.O. & S.W.; cmtd. on bttm; used 2,000 gal. acd.; W.O. 2,597 ft.
Zwolle Synd. No. 1 Mansfield Lbr. Co., sec. 8-7-19. Drlg. 3,400 ft.

Webster Parish

Hunt Oil Co. No. 8 Babb, sec. 13-21-10. Top Holloway sd. 5,642 ft.; set 9⅝-in. csg. 5,627 ft.; T.D. 5,980 ft.; Holloway sd. tstd. dry; drlg. 7,698 ft.
Hunt Oil Co. No. 2 Bodcaw Lbr. Co., NE cor. sec. 33-21-10. Drlg. 5,215 ft.
Hunt Oil Co. No. 3 Bodcaw-Stewart, C NW SW sec. 34-21-10. Drlg. 4,957 ft.
Hunt Oil Co. No. 1 Davis. 660 ft. NE cor. sec. 23-21-10. Holloway sd. 5,394-5,600 ft.; set 9⅝-in. csg. 5,563 ft.; flwg. est. 30 B.P.D. by hds.; flwd. 49 B.O.P.D.; 5,969 ft.
Hunt Oil Co. No. 20 Hope. C NE NW sec. 24-21-10. Top Holloway sd. 5,596-5,604 ft.; set 9⅝-in. csg. 5,580 ft.; did not test Holloway sd.; drlg. 7,635 ft.
Hunt Oil Co. No. 1 Pardee. sec. 24-21-10. Set 13⅜-in. csg. 797 ft.; rng. csg. 5,797 ft.
Hunt Oil Co. No. 1 Sandifer, C NE NE sec. 4-20-10. Drlg. 4,140 ft.
Magnolia Pet. Co. No. 4 Cox, sec. 23-21-10. W.O.C. 5,819 ft.; D.S.T. failed.
Magnolia Pet. Co. No. 1 Merritt Unit, C SW NW sec. 14-21-10. Drlg. 2,935 ft.
Magnolia Pet. Co. No. 1-C Pardee, C NW NE sec. 17-23-11. Drlg. 5,290 ft.
Midstates Oil Corp. No. 1 Welori Lbr. Co. Unit, NE cor. NW sec. 3-20-10. Drlg. 935 ft.
Harry Morgan No. 2-A Hope, C SE SW sec. 24-21-10. Drlg. 6,500 ft.
North American Oil Consol. Co. No. 1 Barrow, C NE NW sec. 21-21-10. Top Trv. Pk. 5,889 ft.; set 9⅝-in. 5,945 ft.; no Holloway sd.; drlg. 8,710 ft.
Ohio Oil Co. No. 4 Cox. Acct. 2, C SW sec. 15-21-10. Drlg. 8,392 ft.
Oliphant Oil Corp. No. 1-B Stewart, C NW NE sec. 5-20-10. Drlg. 5,360 ft.
Oliphant Oil Corp. No. 2-B Stewart, C NW NW sec. 4-20-10. P.B. 1,100 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 2 J. A. Brookshire, sec. 66-12s-3e. T.D. 7,902 ft.; 6-in. csg. 7,902 ft.; tstd. S.W. and sd. killed well; C.O.
Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. Drk.

Anse La Butte—St. Martin Parish

Louisiana-Crusader No. 3 Central Oil Co., sec. 86-9s-5e. S.D. 421 ft.
Marv G. Thomas No. 1 J. A. Broussard. sec. 117-9s-5e. Drlg. sh. 1,348 ft.; no report.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 1 Columbia Ld. & Tmbr. Co., sec. 16-6s-13w. T.D. 7,392 ft.; (est.) 10-min. D.S.T. 7,380-93 ft.; recvd. 4 jts. oil, 800 lbs. press.; run csg.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. Drlg. sh. 7,921 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis et al No. 2-A La. State University, sec. 66-7s-1w. R.U.
Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. Cd. oil sd. 6,477-6,500 ft.; T.D. 7,710 ft.; D.P. stk.; fsg.

Bay St. Elaine—Terrebonne Parish

F. L. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.
Texas Co. No. 4 State-Bay St. Elaine, sec. 19-23s-20e. Rig.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 7 A. Wilberts. sec. 66-9s-11e. Drlg. sh. 6,186 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, sec. 29-8s-11e. Drlg. sd. 4,909 ft.
Standard Oil Co. et al No. 1 Marley Cypress Co., sec. 29-8s-11e. Drlg. L. 7,236 ft.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,021 ft.; D.P. stk.; fsg.
Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. Top salt 9,909 ft.; T.D. 9,914 ft.; P.B. 9,408 ft.; W.O.C.
Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. T.D. 8,500 ft.; 9⅝-in. csg. 8,518 ft.; drlg. sdy. sh. 8,565 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, sec. 19-23s-20e. Rig.
Texas Co. No. 29 State, sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and sanded up; S.D.
Burton-Sutton Oil Co. No. 25 School Ld., sec. 16-14s-13w. Drlg. sh.&L. 7,892 ft.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. 9⅝-in. csg. 4,242 ft.; T.D. 6,367 ft.; P.B. 3,830 ft.; perf. csg. 3,777-97 ft.; flwd. 80 bbls. fluid, 80% S.W.; killed well; perf. csg. 3,782-90 ft.; tstg.
Magnolia Pet. Co. No. 23 Cameron Meadows, sec. 21-14s-13w. Drk.

Chenevville—Rapides Parish

Amerada Pet. Corp. No. 5 Weil Ld. Co., sec. 53-1s-2e. T.D. 6,874 ft.; perf. csg. 6,220-50 ft.; I.P. 512 B.P.D.; 20/64-in. ck.

Charenton—St. Mary Parish

Kinsley Oil, Inc., No. 2 Hertel, sec. 21-13s-9e. R.U.
Pan American Prod. Co. No. 9 Laws Realty Co., sec. 31-13s-10e. T.D. 7,209 ft.; P.B. 4,000 ft.; drlg. sh. 4,163 ft.
Pan American Prod. Co. No. 10 Laws Realty Co., sec. 30-13s-10e. T.D. 2,659 ft.; P.B.; sdtrk.; T.D. 1,131 ft.; I.P. gas well spraying some oil.
Pan American Prod. Co. No. 9 Veeder, sec. 11-13s-9e. Drlg. sh. 327 ft.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico. Drlg. sh. 950 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 5,750 ft., stky. sh., S.D.
Humble O. & R. Co. No. 1-B Community, sec. 49-10s-2e. Drlg. sd.&sh. 7,328 ft.
Humble O. & R. Co. No. 14 Gumbel, sec. 33-10s-2e. Drlg. sh. 2,998 ft.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.
Southern Drillers, Inc. (D. J. Simmons) No. 1 August Berteau, sec. 55-10s-2e. Drlg. sh. 7,336 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. Drlg. sh. 7,800 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40-17s-15e. Drlg. sh. 9,989 ft.
Shell Pet. Corp. No. 7 Pelican. T.D. 9,502 ft.; run 7-in. csg.

Garden Island—Plaquemines Parish

Texas Co. No. 28 State, sec. 100-23s-38e. Drlg. sh. 4,865 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 2 Grand Prairie Lve., sec. 48-20s-18e (1,320 ft. W of No. 1). Drlg. 1,200 ft.

Hackberry—Cameron Parish

Berry Oil Corp. No. 1 Cora E. Lyons, sec. 28-12s-10w (West Hackberry). Drlg. sh. 3,502 ft.
Darryl Davis No. 1 Bickford, sec. 39-12s-10w. T.D. 2,873 ft.; top sh., L., and brkn. cap; S.O. 2,792 ft.; 5-in. csg. 2,778 ft.; T.D. 2,873 ft.; tstd.; S.D.
Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. T.D. 3,201 ft.; P.B. 2,830 ft.; W.O.C.; to sdtrk. jnk.; fsg.; P.B. 2,830 ft.; trying to sdtrk.
Stanolind O. & G. Co. No. 1 Carter, sec. 22-12s-10w. Drk.
Stanolind O. & G. Co. No. 1 Dorisse Kough, sec. 28-12s-10w. T.D. 3,060 ft.; 7-in. csg. 3,046 ft.
Superior Oil Co. No. 3 Benson Vincent, sec. 30-12s-10w. Drlg. sh. 6,126 ft.
Texas Co. No. 24-B State, sec. 12s-9w T.D. 8,052 ft.; sdtrkd.; drlg. sh. 7,459 ft.
Union Sulphur Co. No. 7 Hanzen, sec. 13-12s-10w. Drk.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e. Drlg. sdy. sh. 1,414 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. T.D. 10,645 ft.; milling to sdtrk. stk. D.P.; sdtrkd. 10,253 ft.; drlg. sh. 10,308 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 1 State-Lake Peigneur. Twp. 12s-5e. Top salt 3,642 ft.; T.D. 3,648 ft.; salt; S.D.

Jennings—Acadia Parish

Frank Bennett No. 1 Freeman & Carden, sec. 45-9s-2w. Drlg. sh. 4,918 ft.
W. T. Burton No. 6 Roboria, sec. 41-9s-2w. T.D. 6,797 ft.; 7-in. csg. 6,721 ft.; fsg. tbg.
Cosmo Pet. Co. No. 1 Jennings-Clement, sec. 46-9s-2w. T.D. 3,552 ft.; sdtrkd.; drlg. sh. 2,543 ft.
Frio Oil Co. No. 2 Gulf fee, sec. 45-9s-2w (NW flank). 10¾-in. csg. 1,512 ft. drlg. sh. 3,700 ft.
Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 6,687 ft.; P.B. 4,300 ft. T.D. 6,170 ft.; S.D.
Glassell & Glassell No. 5 Trushell, sec. 42-9s-2w. T.D. 6,569 ft.; fsg.
Glassell & Glassell No. 6 Trushell, sec. 42-9s-2w. Drk.
Gulf Oil Corp. No. 40 Arnaudet, sec. 48-9s-2w. Loc.
Iles Pet. Corp. No. 2 Jennings-Heywood, sec. 41-9s-2w. T.D. 1,856 ft.; 6-in. csg. 1,700 ft.
L. & L. Oil Co. No. 1 Housierre-Latrielle, sec. 47-9s-2w. T.D. 2,003 ft.; W. O.S.R.
W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. Cg. sdy. sh. 7,120 ft.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,995 ft.; P. B. 1,774 ft.; tstd. S.W.; S.D.
Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.; S.D.
Shell Pet. Corp. No. 4 Community, sec. 40-9s-2w. Drlg. sh.&L. 5,455 ft.
Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. T.D. 6,838 ft.; P.B. 4,890 ft.; to sdtrk.; drlg. sd.&L. 5,953 ft.
Superior Oil Co. No. 4 Iowa-Jennings, sec. 41-9s-2w. T.D. 6,778 ft.; perf. csg. 6,170-6,290 ft.; I.P. 262 B.P.D.; 11/64-in. ck.
Superior Oil Co. No. 4 Clement, sec. 46-9s-2w. Drlg. sh. 6,406 ft.
Superior Oil Co. No. 7 Jennings-Heywood, sec. 41-9s-2w. R.U.
Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. T.D. 7,926 ft.; sdtrkd.; T.D. 7,612 ft.; 7-in. csg. 7,497 ft.
Three Sands Oil Co. No. 1 Whisenhunt & Tyrell, sec. 46-9s-2w. Cmtd. 6-in. csg. 1,600 ft.; drlg. sd.&sh. 2,560 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; fsg. for tbg.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien, Adams, sec. 9-17s-24e. R.U. (cor.).
Texas Co. No. 11 Lafitte, sec. 19-17s-24e. T.D. 10,106 ft., oil sd.; 7⅝-in. csg. 10,085 ft.
Texas Co. No. 3 Madison Realty Co., sec. 17-12s-24e. Drlg. sd.&L. 9,067 ft.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. Drlg. sh.&L. 7,263 ft.
Texas Co. No. 10 Rigolet Cooperative Fur Co., sec. 28-17s-24e. Canal comp.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. T.D. 4,280 ft.; P.B. 2,734 ft.; sd. S.O.; too sd. 3,833 ft.; T.D. 4,173 ft.; P.B. 3,600 ft.; sdtrkd.; drlg. sh. 3,704 ft.
Texas Co. No. 42 State-Lake, sec. 40-21s-19e. Drlg. sd. 9,330 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 21 State, sec. 8-23s-18e. T.D. 6,058 ft.; P.B. and sdtrkd.; drlg. sd.&sh. 5,626 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 8 Lafourche, sec. 11-18s-25e. Drlg. hd. sh. 2,664 ft.; 10¾-in. csg. 967 ft.; drlg. sh. 3,516 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, sec. 35-21s-22e. Drlg. sh. 6,283 ft.
Texas Co. No. 7 Leeville, sec. 27-21s-22e. R.U.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Robert Verret, sec. 32-19s-19e. Drlg. hd. sd.&gvl. 1,876 ft.; 20-in. csg. 296 ft.; 13⅜-in. csg. 3,164 ft.; drlg. sdy. sh. 6,035 ft.

Lockport—Calcasieu Parish

La. Crusader Oil Co. No. 1 Milam Stieker, sec. 6-10s-9w. Drlg. sh. 1,828 ft.; 10¾-in. csg. 1,028 ft.; drlg. sh. 4,825 ft.
Magnolia Pet. Co. No. 23 Miller, sec. 9-10s-9w. Drlg. sh. 7,674 ft.
T. C. Markley No. 1 Farquhar (offset Continental No. 1 J. H. Moss). R.U.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 5 State-Lake Long, sec. 64-17s-19e. Drlg. sh. 2,764 ft.; 13⅜-in. csg. 2,761 ft.; drlg. sd. 6,285 ft.

New Iberia—Iberia Parish

Canal Oil Co. No. 10 Bernard, sec. 54-12s-7e. T.D. 3,791 ft.; salt; abd.
Canal Oil Co. No. 4 Sabatier. T.D. 2,560 ft.; salt; P.B. 2,310 ft.; perf. csg. 2,295-2,310 ft.; I.P. 30 B.P.D.
H. Fotiades No. 5 Gulf Ld., sec. 25-12s-7e. T.D. 4,957 ft.; P.B. 4,600 ft.; W. O.C.
H. Fotiades No. 7 Gulf Ld., sec. 25-12s-7e. Drk.
Wm. Helis No. 6 Schwing, sec. 56-12s-7e. Salt 3,949-50 ft.; P.B. 1,850 ft.; T.D. 3,938 ft.; trying to sdtrk.
Texas Co. No. 2 Burke, sec. 56-12s-7e. T.D. 7,076 ft., salt; P.B. 4,350 ft.; sidetracking 4,830 ft.; T.D. 5,804 ft.; run csg.
Texas Co. No. 4 J. P. Drake, sec. 26-12s-7e. Drk.; (cor.).
Texas Co. No. 2 Clemente Hebert, sec. 25-12s-7e. Drk.
Texas Co. No. 2 Schwing, sec. 71-12s-7e. Drlg. sdy. sh. 4,543 ft.
Texas Co. No. 4 Grelino, sec. 25-12s-7e. T.D. 6,181 ft.; 7-in. csg. 6,100 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 3 Anton Ohlenforst, sec. 34-8s-1e. Sd. 7,177-94 ft.; cmtd. 7-in. csg. 7,194 ft.; I.P. 470 B. P.D.; 13/64-in. ck.
Humble O. &. R. Co. No. 1 H. J. Thevis, sec. 34-8s-1e. Loc.

Port Barre—St. Landry Parish

T. C. Markley No. 1 Lahaye, sec. 4-6s-5e. T.D. 4,775 ft.; 7-in. csg. 4,640 ft.; I.P. 240 B.P.D.; ¼-in. ck.
Pan American Prod. Co. No. 3 Garland, sec. 4-6s-5e. Drk.
Pan American Prod. Co. No. 1 Lahaye, sec. 4-6s-5e. T.D. 5,426 ft., salt; P.B. 1,868 ft.; T.D. 4,711 ft.; 7-in. csg. 4,690 ft.; I.P. 192 B.P.D.; ¼-in. ck.
Pan American Prod. Co. No. 1 Rene Nezal. Drk.
Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. S.D. 1,565 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 36 Orleans Lve. Bd., sec. 14-18s-15e. Drlg. sh. 9,019 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., sec. 18-19s-17e. Drlg. sh. 6,221 ft.
Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 11,014 ft.; P.B. 10,978 ft.; tstd. S.W.; P.B. 10,780 ft.; perf. csg. 10,745-60 ft.; sqzd. with cmt.
Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.
Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; S.D.
Amerada Pet. Corp. No. 2 South Coast Corp., sec. 35-15s-19e. Drlg. sdy. sh. 11,597 ft.
Tide Water Oil Co. No. 1-A South Corp., sec. 34-15s-19e. R.U.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 12 United Ld. Co., sec. 15-10s-4e. Cap rk. 1,725-1,817 ft.; D.P. stk.; abd.
Sorrento Pet. Corp. No. 2 White, sec. 22-10s-4e. R.U.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co. No. 4-B Calcasieu Natl. Bnk., sec. 29-7s-3w. Loc. abd.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, sec. 36-10s-4w. Drlg. sdy. sh. 10,943 ft.
Union Sulphur Co. No. 2 T. R. S. Farms, sec. 23-10s-4w. Sh. 9,736 ft.; cmtd. 7-in. csg. 8,888 ft.; drlg. sh. 10,000 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. T.D. 4,153 ft., salt; P.B. 3,987 ft.; 7-in. csg. 3,827 ft.; bailed dry; S.D. 3,857 ft.
J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 19-9s-12w. Top salt 2,270 ft.; S.D.; 2,273 ft.; P.B. 1,150 ft.; S.D.

Timballer Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; drlg. sdy. sh. 5,206 ft.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 1-A Community, sec. 99-17s-20e. T.D. 8,094 ft.
Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. T.D. 10,055 ft.; P.B. 8,880 ft.; top sd. and sdy. sh. S.O. 9,300 ft.; 7-min. D.S.T. 9,290-9,325 ft. tstd. 33 stands of P.L.O.; rng. csg.
Pan American Prod. Co. No. 1 A. Robichaux, sec. 3-17s-20e. T.D. 5,889 ft.; stk. D.S.; P.B. and sdtrk.; drlg. sh. 4,553 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 1 Bureas Lve. Bd., sec. 23-21s-30e. Drlg. 967 ft.
Tide Water Oil Co. No. 8 Manhatta. Ld. & Fruit Co., sec. 26-21s-30e. T.D. 7,250 ft.; sdtrkd. at 6,146 ft.; T.D. 6,653 ft.; abd.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 2 Fornier, sec. 44-35-2e. T.D. 9,103 ft.; oil sd. 9,043-94 ft.; tstg.
Continental Oil Co. No. 1 A. M. Fontenot, sec. 46-3s-2e. T.D. 9,040 ft.; I.P. 390 B.P.D.; 1/4-in. ck.
Continental Oil Co. No. 2 La. Ld. & Imp. Co., sec. 46-3s-2e. Loc.
Continental Oil Co. No. 2 Opelousas, St. Landry, sec. 44-3s-2e. Loc.
Continental Oil Co. No. 2 Piere McDaniel, sec. 44-3s-2e. Drlg. sh. 6,675 ft.
J. R. Hughes Oil Co. No. 1 J. E. Ortego, sec. 36-3s-2e. Drlg. sh. 1,773 ft.

Vinton—Calcasieu Parish

J. B. Reddich No. 3 Vincent, sec. 34-10s-12w. T.D. 2,950 ft.; fsg.

Welsh—Jeff Davis Parish

Pure Oil Co. No. 1 Vermilion Irrig. Co., sec. 41-12s-2w. R.U.R.
Stanolind O. & G. Co. No. 2 Conover sec. 20-9s-5w. T.D. 7,410 ft.; abd.
Stanolind O. & G. Co. No. 1 Pousson. sec. 28-9s-5w. Drlg. sh. 6,434 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Reese, sec. 5-12s-2w. T.D. 3,197 ft.; 13⅜-in. csg. 3,114 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 O. Miller, sec. 7-9s-5w. Drlg. sdy. L. 6,461 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Atlantic Ref. Co. No. 1 Klumpp, sec. 12-7s-2w. Drk.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.; prep. to resume drlg.
Magnolia Pet. Co. No. 1 W. G. Bowden, sec. 7-2s-4e. Bldg. rd.

Calcasieu Parish

Union Sulphur Co. No. 1 Drew-Manuel sec. 4-10s-11w. T.D. 8,807 ft.; abd.
Sun Oil Co. No. 2 Lutcher-Moore, sec. 12-8s-13w. Bldg. rd.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.; T.A.

Cameron Parish

Federal Roy. Co. No. 1 State-Calcasieu Lake, sec. 34-13s-8w. Driving piling.
Humble O. & R. Co. No. 2 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. T.D. 9,782 ft.; S.D.
Pure Oil Co. No. 2 Calcasieu Natl. Bnk., sec. 18-12s-4w (½ mi. N of No. 1). Drk.
Union Sulphur Co. No. 3 Miami Corp., sec. 33-12s-8w (Willow Lake area). R.U.

Concordia Parish

Benedum & McCormick No. 1 L. P. Allen, sec. 35-5n-8e. R.U.

Jeff Davis Parish

Union Sulphur Co. No. 1 H. J. Liggett, sec. 36-7s-5w. T.D. 8,392 ft.; S.D.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. T.D. 5,230 ft.; S.D.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brow[illegible] Cypress Co., sec. 70-15s-15e. T.D. 6,870 ft.; rmg. crkd. hole.
Texas Co. No. 1 La Terre, sec. 1-20s-21e. Drlg. sh. 8,831 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, sec. 1-10s-13e. Drlg. sh. 2,175 ft.
W. T. Burton No. 1-B R. E. E. de Montluzin, sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. Drlg. sh. 7,093 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.
E. F. Kalb et al No. 1 Lee Lbr. Co., sec. 9-5n-3e. S.D. 140 ft.

St. James Parish

Continental Oil Co. No. 1 Colonial Sugars Co., sec. 46-12s-5e. Cg. sdy. sh. 8,372 ft.
Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. T.D. 7,499 ft.; 9⅝-in. csg. 6,520 ft.; P.B.; perf. csg. 6,358-64 ft.; 188 bbls. 41.2-grav. oil; ¼-in. ck.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Drlg. sh. 8,423 ft.

St. Landry Parish

Herton Oil Co. et al No. 1 Thistlephlite Lbr. Co., sec. 60-4s-4e. Drk.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., sec. 14s-12e. T.D. 10,550 ft.; fsg.
Texas Co. No. 6 State Lake Mongoulois. sec. 10-10s-9e. Drlg. S.W. sd.
Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. Drlg. sd.&L. 8,802 ft.

St. Tammany Parish

Ozro B. Phillips No. 1 A. J. Planche. sec. 28-6s-10e. S.D. 3,118 ft.; abd.

Terrebonne Parish

Barnsdall Oil Co. No. 1 R. R. Barrow Inc., sec. 41-17s-18e. Drlg. sh. 10,678 ft.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e T.D. 13,409 ft.; 7-in. csg. 12,215 ft.; P.B. 8,746 ft.; P.B. 8,808 ft.; cleaned hole of D.P. to 8,600 ft. with reversing tool.
Shell Pet. Corp. No. 1 Peters, sec. 73-18s-18e. Cg. 9,215 ft.
Shell Pet. Corp. No. 1 Realty Operators. sec. 10-18s-16e. 13⅜-in. csg. 2,461 ft.; drlg. sh. 11,208 ft.
Texas Co. No. 1 State, Caillou Island Bay, Twp. 23s-14e. Cd. sd. S.O. 4,390-95 ft.; top salt 4,922 ft.; T.D. 4,924 ft.; salt.

TEXAS

Week Ending August 13

GULF COAST FIELDS

Danbury—Brazoria County

Rowan Drlg. Co.-Shell Pet. Corp. No. 7 Thos. Jamison, H. Austin Sur. No. 6. 10¾-in. csg. 188 ft.; T.D. 1,977 ft.; oil sd.; run csg.; top sd. 1,957 ft.

Lockridge—Brazoria County

Shell Pet. Corp. No. 5-B Ramsey State farm, J. W. Hall Sur. T.D. 6,365 ft.; W.O.C.; P.B. 6,336 ft.; made sqze. job 6,342-52 ft.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 9 J. E. Alexander, H.T.&B. Sur. 28. Drk.
Stanolind O. & G. Co. No. 6 Artie Remely, H.T.&B. Sur. No. 28. Drk.
Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.
Stanolind O. & G. Co. No. 7 J. F. Law, H.T.&B. Sur. No. 36. Drlg. L. 4,830 ft.
Stanolind O. & G. Co. No. 2 P. McDonald, Mary Sloan Sur. Drk.
Stanolind O. & G. Co. No. 15 Sneed, A. C.H.&B. Sur. Drk.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 1 Chenault, C. Breen Sur. Drlg. sh. 2,930 ft.
Harrison & Abercrombie No. 1 Fesler and Larsen, C. Breen Sur. Loc.
Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. Loc.
Harrison & Abercrombie No. 1 C. Larsen, Chas. Breen Sur. Drlg. sdy. sh. 9,915 ft.
Harrison & Abercrombie No. 1 Sadler & Larsen, C. Breen Sur. Cg. 10,050 ft.

Stratton Ridge—Brazoria County

Sterling O. & R. Co. No. 1 J. C. Kramer, T. W. Grayson Sur. T.D. 3,695 ft.; P.B. 3,200 ft.; W.O.C.; trying to sdtrk.

West Columbia—Brazoria County

Mike Hogg No. 3 fee, G. Tennille Sur. Drlg. sh. 3,930 ft.
Texas Co. No. 25 W. H. Abrams, G. Tennille Sur. T.D. 4,881 ft.; P.B. to sdtrk.; drlg. L. 4,067 ft.
Texas Co. No. 26 Abrams, G. Tennille Sur. Drlg. sd. 2,610 ft.
Texas Co. No. 27 W. H. Abrams, G. Tennille Sur. Loc.
Texas Co.-Sterling O. & R. Co. No. 8 Phillips, Geo. Tennille Sur. R.U.

Cedar Point Field—Chambers County

Standard Oil Co. of Texas-Salt Dome Oil Corp. No. 1-94 State. T.D. 6,450 ft.; P.B. 3,675 ft.; sdtrkd. at 3,653 ft.; top oil sd. 4,414 ft.; cd. to 4,430 ft.; flwg. 10 B.O.P.H.; ¼-in. ck.

Cotton Lake—Chambers County

J. R. Turnbull No. 1 Casey, S. Barrow Sur. T.D. 6,539 ft.; 5½-in. csg. 6,525 ft.; perf. csg. 6,460-70 ft. and 6,480-92 ft.; flwd. oil and S.W.; reperf. csg. 6,465-95 ft.; flwd. oil; well went dead; perf. csg. 6,390-6,410 ft.; tstg.

Seabreeze—Chambers County

Sun Oil Co. No. 3 Broussard-Hebert. T. &N.O. Sur., sec. 127. Cd. oil sd. 5,461-84 ft.; tstg.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 6 A. D. Middleton, S. Burney Sur. R.U.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. T.D. 7,505 ft.; run csg.

Hitchcock—Galveston County

N. W. Hunter No. 1 J. D. Hughes, A. Burke Sur. Spd.

Clear Lake—Harris County

West Prod. Co. No. 4 West fee, J. B. McKinstry Sur. Drlg. sh. 5,000 ft.

Clinton—Harris County

S. G. Harrison No. 1 Lafferty, J. Brown Sur. Drlg. sh. 3,726 ft.
Stanolind O. & G. Co. No. 1 M. J. Barraco, Reels & Trobough Sur. (1,200 ft. S of No. 1). T.D. 4,166 ft.; abd.
Stanolind O. & G. Co. No. 1 C. J. Caywood, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 3 Sanders, Reels & Trobough Sur. T.D. 3,806 ft.; perf. csg. 3,726-36 ft.; flwd. S.W.; reperf. csg.; tstd. S.W.; abd.
Sun Oil Co. No. 1 H. C. Oates, Reels & Trobough Sur. Drlg. 1,910 ft.

Eureka—Harris County

Jack Frazier No. 1 Lackner, H. Reinerman Sur. Drlg. sh. 4,730 ft.
Jack Frazier No. 4 Vollmer-Neiman, J. Reinerman Sur. Drlg. sh. 5,930 ft.
Means & McGee No. 1-C Lackner, H. Reinerman Sur. Drlg. sh. 2,515 ft.
Tide Water Asso. Oil Co. No. 2-A Lackner, J. Reinerman Sur. T.D. 7,760 ft.; cmtd. csg. on bttm.
Tide Water Asso. Oil Co. No. 1-B Laura Lackner, H. Reinerman Sur. Drlg. sh. 3,920 ft.

Fairbanks—Harris County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Berryman and Emmott, J. Waugh Sur. Drlg. sh. 6,344 ft.
Amerada-Stanolind O. & G. Co. No. 1 Adell, J. Clarkson Sur. R.U.
Amerada-Stanolind O. & G. Co. No. 3 M. E. Cougat, Geo. Ayers Sur. Drlg. sh. 6,412 ft.
Amerada-Stanolind O. & G. Co. No. 2 W. E. Denman, J. Waugh Sur. T.D. 6,850 ft.; tstg.
Amerada-Stanolind O. & G. Co. No. 4 H. E. Ley, J. Waugh Sur. Drlg. sh. 4,346 ft.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 Marietta, G. Williams Sur. Loc.
Amerada-Stanolind O. & G. Co. No. 3 E. W. Mills, A. Lawson Sur. T.D. 6,857 ft.; 6⅝-in. csg. 6,856 ft.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 3 Smith, J. Waugh Sur. Loc.
W. V. Bowles No. 3 Galloway, May McFarland Sur. Cg. sh. 6,810 ft.
Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf. csg. 6,839-43 ft.; would not flow; S.D
Gem Oil Co. No. 5 Reid, G. Ayers Sur. T.D. 6,853 ft.; 5½-in. csg. on bttm.; perf. csg. 6,846-51 ft.; flwg. dist.
E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. Loc.
Housch-Thompson No. 1 Fisher Est., T. Hogan Sur. R.U.
Mortex Oil Co. No. 1 W. R. Reid, G. Ayers Sur. Drlg. sh. 2,367 ft.
Showers & Moncrief No. 1-B B. W. Reid, J. Waugh Sur. T.D. 6,848 ft.; run csg.
Skelly Oil Co. No. 2 J. H. Emmott, J. Waugh Sur. Drlg. sh. 4,139 ft.
Skelly Oil Co. No. 3 J. H. Emmott, J. Waugh Sur. Loc.
Smith & Ownby No. 3-B Gibson, Geo. Ayers Sur. Drlg. sh. 6,538 ft.
Stanolind O. & G. Co. No. 1 Fritz Look, S. Lewis Sur. Drlg. sh. 5,120 ft.
Union Prod. Co. No. 1 Goodykoontz, W. S. Powell Sur. T.D. 7,617 ft.; S.W. sd.; perf. 5½-in. csg. 7,222-25 ft.; tstd. oil and S.W.; sqzd. perfs.; P.B. to 7,100 ft.; perf. csg. 7,175-85 ft.; comp. for gas well.
Williams and Thompson No. 1 A. R. Kraemer. Cg. 6,530 ft.
Windsor Oil Co. No. 3 O. E. Parker, J. Waugh Sur. Loc.
Windsor Oil Co. No. 4 O. Parker, J. Waugh Sur. Drlg. sh. 5,091 ft.
Windsor Oil Co. No. 1-B C. D. Ley, Geo. Ayers Sur. Drk.
Windsor Oil Co. No. 4 H. E. Ley, J. Waugh Sur. T.D. 6,843 ft.; tstg.
Windsor No. 5 H. E. Ley, J. Waugh Sur. T.D. 6,840 ft.; tstg.

Friendswood—Harris County

Humble O. & R. Co. No. 10 E. A. Grey, Perry & Austin Sur. T.D. 6,046 ft.; run csg.
Humble O. & R. Co. No. 13 Grey, Perry & Austin Sur. Drlg. sh. 5,067 ft.
Humble O. & R. Co. No. 3 Herman Hospital, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 J. L. Jones Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 Tinkler, W. D. C. Hall Sur. Drlg. sh. 2,312 ft.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Cordele—Jackson County

Crown Central Pet. Corp. No. 3 Faust, P. White Sur. (660 ft. S of No. 1). T.D. 2,660 ft.; 5⅛-in. csg. 2,651 ft.; flwg. 5 B.O.P.H.; ¼-in. ck.

Sign of INCREASED PRODUCTION

Throughout the World. MORE MILLER Sand Pumps are being used to clean-out sand and sediment *—than all other sand pumps made.*

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet.

5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

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See Page 1445 COMPOSITE CATALOG

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FOR SALE BY SUPPLY STORES EVERYWHERE

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. T.D. 8,198 ft., salt; top salt 8,156 ft.; 5-in. csg. 5,659 ft.; perf. 5,-548-52 ft.; P.B. 3,895 ft.; perf. csg. 3,-880-90 ft.; made sqze. job.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. T.D. 7,726 ft.; tstd. oil on D.S.T. 7,711-21 ft.; run elec sur.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 5 J. H. Phelan, A. Stivers Sur. S.D. 8,323 ft.

Spindletop—Jefferson County

Unity Oil Co. No. 1 Greer Noll, J. A. Veatch Sur., Blk. 7, Spindletop Hgts. Subd. (NE flank wildcat). Drk.

Hardin—Liberty County

Atlantic Ref. Co. No. 2 C. R. Wilson, A. B. Johnson Sur. Rig.
Geo. Echols-Shell Pet. Corp. No. 1 J. H. Cessna, H. B. Johnston Sur. T.D. 7,-656 ft.; perf. 5½-in. csg. 7,649-52 ft.; flwd. S.W.; S.I.
Gulf Oil Corp. No. 4-A Barfield. T.D. 7,740 ft.; P.B. 7,544 ft.; W.O.C.
Humble O. & R. Co. No. 1 M. H. Johnson, H. B. Johnston Sur. Drlg. sh. 7,-069 ft.
Humble O. & R. Co. No. 3 W. S. Partlow, H. B. Johnston Sur. R.U.; (cor.).
Shell Pet. Corp. No. 3 J. H. Cessna, H. B. Johnston Sur. Drlg. sh. 6,412 ft.
Shell Pet. Corp. No. 4-A J. H. Cessna, H. B. Johnson Sur. Drk.
Tidewater Asso. Oil Co. No. 2-A Cessna, A. B. Hardin Sur. Drlg. sh. 7,530 ft.
Woodley Pet. Co. No. 1 Emma Davis et al, A. B. Hardin Sur. Spd.
Woodley Pet. Co. No. 2 Emma Davis et al, A. B. Hardin Sur. Spd.

McCrosky—Matagorda County

Pierce Est. No. 4-A Pierce. T.D. 6,626 ft.; 5½-in. csg. 6,621 ft.; flwd. 103 bbls. in 12 hrs.; ¼-in. ck.; died; swbd. oil and S.W.; P.B.

Bay City—Matagorda County

Atlantic Ref. Co. No. 1 Gola, E. Hall Sur. T.D. 9,759 ft.; 7-in. csg. 8,212 ft. perf. csg.; flwg. oil and wtr.; tstg.
Hamman Expl. Co. No. 1 C. W. Badouh, E. Hall Sur. Drlg. sdy. sh. 9,130 ft.
Hamman Expln. Co. No. 3 Thompson, E. Hall Sur. Drlg. sdy. sh. 5,312 ft.

Segno—Polk County

Gulf Oil Corp. No. 3 A. Ragan, I.&G.N. Sur., sec. 15. Drlg. sh. 4,930 ft.
Gulf Oil Corp. No. 12 Wing. Drlg. sh. &L. 6,790 ft.
Humble O. & R. Co. No. 9-B Kirby, M. Victor Sur. Drlg. L. 6,584 ft.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No. 11 Hurd fee, N. Hurd Sur. Drlg. sh. 7,396 ft.

Magnet—Wharton County

Gray & Wolf No. 1 State, Colo. River Sur. 10¾-in. csg. 1,160 ft.; S.D. for high wtr.

Withers—Wharton County

Texas Co. No. 50-C Pierce Est., John Caldwell Sur. Drlg. sh. 2,210 ft.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Glenn McCarthy No. 1 G. C. Street, D. H. M. Hunter Sur. R.U.
W. C. Neville et al No. 1 Houston Farms Dev. Co., Perry & Austin Sur. 10¾-in. csg. 1,170 ft.; drlg. sh. 5,530 ft.
Texas Co. No. 1 M. W. Jones, H.T.&B. Sur. Drlg. 7,510 ft.
Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. Drlg. sh. in sdtrkd. hole 3,526 ft.

Burleson County

Peerless O. & G. Co. No. 1 G.C.&S.F. fee, James Lastley Sur. S.D. 1,200 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
Cordy Calvin, Tr., No. 1 Paul W. Sherman Est., James McFaddin Sur. (Moss Bluff area). Drk.

Fort Bend County

Henry C. Adams No. 1 Sury, H.&T.C.R. R. Sur., sec. 48 (Needville). Drlg. sd. 5,620 ft.

Galveston County

Sun Oil Co. No. 1 Cade, A. Dickinson. T.D. 8,120 ft., sh.; cmtd. 7-in. csg. 8,750 ft.; (protection string); D.S. stk. sdtrkd. hole 7,341 ft.; drlg. 7,686 ft.

Harris County

Commerce Oil Co. No. 1 Meaderbrook Dev. Co., J. R. Harris Sur. T.D. 8,-501 ft.; making elec. sur.; abd.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.
Humble O. & R. Co. No. 1-A Keeler, W. Whitlock Sur. Loc.

Jackson County

Magnolia Pet. Co. No. 3-A West Rnch., Ramon Musquez Sur. 13⅜-in. csg. 1,-346 ft.; drlg. sh. 3,170 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two: S.D.
Humble O. & R. Co. No. 6 McFaddin State "B," 1,980 ft. NW of No. 1 State Gulf of Mexico. Drlg. sh. 2,115 ft.

Liberty County

Wallace & Hargrove et al No. 1 J. C. League, M. DeLos Santos Sur. Rig.
Sun Oil Co. No. 1 Caroline Jordan, L. Gedruf Sur. T.D. 7,960 ft.; abd.
Texas Co. No. 1 Paige, James Hanney Sur. Drlg. sh. 8,020 ft.

Matagorda County

Glenn H. McCarthy No. 1 Nancy Moffett et al, Susan Perkins Sur. 10¾-in. csg. 2,405 ft.
Ohio Oil Co. No. 1 W. D. Cornelius, P. C. Yarborough Sur. Spd.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. 10¾-in. csg. 700 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.
W. L. Todd et al No. 1 I. L. Martin, Z. Landrum Sur. M.I.M.

Newton County

Republic Prod. Co. No. 1 Sabine Tram, Isaac Garner Sur. (NW Starks Prospect). Drk.

Polk County

Jack Frazier No. 1 S. H. Bergman, A. Viesea Sur. (3 mi. W of Goodrich). 10¾-in. csg.; drlg. 1,710 ft.

Tyler County

Chapman Minerals Corp. No. 1 Angelina Co. Lbr. Co., James Corin Sur. T.D. 3,887 ft.; abd.

Waller County

Stanolind O. & G. Co. No. 1 Freeman. H.T.&C. Sur. No. 99. T.D. 11,076 ft.; to P.B.; perf. csg. 7,365-85 ft.; comp. for gas well.

Wharton County

Humble O. & R. Co. No. 1 Worington, S. F. Austin Sur. S.D. 6,500 ft.
Albert Plummer No. 1 Mrs. Corbett, Kuykendall Sur. T.D. 5,966 ft.; S.D.

S. W. TEXAS WILDCATS

Atascosa County

Mason Altgelt No. 1 J. G. Gibson, Francisco De La Garza Sur. Drlg. 1,930 ft.
G. C. Richardson No. 1 Fischer, A.B.& M. Sur. No. 1013. Sd. 844-55 ft.; W. O.C.; no report.
Western Gulf Oil Corp. No. 1 Vanegars, Francisco De La Garza Sur. T.D. 2,-780 ft.; abd.
Western Gulf Prod. Co. No. 2 Vanegas, Francisco De La Garza Sur. Spd.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 1,725 ft.
Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. T.D. 4,-700 ft.

Bee County

Atlantic Ref. Co. No. 1 Courtney, Geo. Kerr Sur. Drlg. sh. 2,312 ft.
R. B. Swiger et al No. 1 R. B. McKinney. 10¾-in. csg. 102 ft.; drlg. 3,415 ft.

Bexar County

Frank Gilpin, Jr., No. 1 Nieman, Juan Montes Sur. S.D. 40 ft.
Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 737 ft.; 5⅛-in. csg. on bttm.; S.D.

Caldwell County

Banke Miller Oil Co. No. 1 Martindale, Hector McNeil Sur. T.D. 3,223 ft.; S.D.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogsberry Sur. Drlg. sh. 6,-512 ft.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. S.D. 150 ft.

Duval County

James Foster No. 1 Foster, B.S.&F. Sur. No. 268. S.D. 1,850 ft.
Frank Gravis No. 1 Megerle, J. Boyles Sur. T.D. 6,045 ft.; abd.
J. A. Huff No. 1 Worden & Drought, J. L. Soen Sur. 154 (2 mi. NW Charamousca field). T.D. 1,367 ft.; abd.
Magnolia Pet. Co. No. 1 Duval County Ranch Co., C.C.S.D.&R.G.N.G. Sur. No. 83. Drlg. sh. 2,267 ft.
Rowan & Hope No. 1 Cuellar, sec. 69, (Tesoro field). 8-min. D.S.T. 5,074-81 ft.; tstd. 500 ft. P.L.O.
Standard Oil Co. of Texas No. 1. Dolores Garcia Sur. T.D. 6,317 ft.; 7-in. csg. on bttm.; cg. 6,558 ft.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 1 Schley, Jos. Travalder Sur. No. 174. M.I.M.
G. E. Smith No. 1 San Antonio Joint Stock Ld. Bnk., G.B.&C.N.G.R.R. Sur. No. 1. Drlg. 3,310 ft.

Goliad County

Jack Frazier and Bunte Prod. Co. No. 1 Taylor. Cg. 4,937 ft.
Sun Oil Co. No. 1 Lee Homer, John Payne Sur. Drlg. sh. 1,200 ft.

Guadalupe County

Banks-Miller Oil Co. No. 1 Union Central, R. G. Davis Sur. S.D. 2,167 ft.
A. D. King Rosenbrock, Vincente Duran Sur. S.D. 200 ft.
H. G. Spiller No. 1 Allen, H. Cottle Sur. Drlg. 1,000 ft.

Hidalgo County

R. E. Harding No. 1 Lynn, Juan Jose Hinojosa Sur. T.D. 7,300 ft.; perf. 5½-in. csg. 7,103-15 ft.; tstd. S.W.; perf. csg. 7,074-82 ft.; tstd. S.W.; sqzd. perf.; perf. csg. 5,970-74 ft.; flwg. dist. and drlg. mud while C.O.
Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. Cg. sh. 4,030 ft.
Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). T.D. 5,860 ft.; cmtd. 7⅝-in. csg. 5,847 ft. (protection string). Cg. sh. 6,210 ft.
Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; drlg. sh. 9,412 ft.
Wheelock & Collins No. 1 Temple Lbr. Co., Lino Cavaos, Porc. 57-A. T.D. 5,-064 ft.; S.D.

Jim Hogg County

Humble O. & R. Co. No. 2 Kelsey Bass, San Rafel gr. Drlg. sh. 3,483 ft.

Jim Wells County

Blanco Oil Co.-Buchanan Prod. Co. No. 1 Rattan, Blk. 14, L. G. Collins Subd. T.D. 5,302 ft.; perf. csg. 5,273-5,300 ft.
J. W. Cosner No. 1 C. B. Stillwell, Blk. 62, L. G. Collins Farm Trs. Drlg. sh. 2,-430 ft.
H. M. Howell No. 1 E. A. Hawkins, San Diego de Abajo Sur. Sh. 1,041 ft.; 10¾-in. csg. 1,031 ft.; drlg. sh. 5,821 ft.
H. H. Howell No. 1 Mosser, Blk. 97, L. G. Collins Subd. Drlg. sh. 6,825 ft.
H. H. Howell No. 1 Stillwell, Blk. 63, L. G. Collins Subd. Drlg. sh. 5,212 ft.
Humble O. & R. Co. No. 1 Wm. Adams, Marcellino Lopez Gr., Abst. No. 28. Drlg. sh. 5,648 ft.
Magnolia Pet. Co. No. 1 Romano, V. de Garcia Las Animas Sola gr., 1,126 ft. E of discovery well. R.U.
Magnolia Pet. Co. No. 1 Martin, Ana Maria Vaco gr. Drlg. sh. 4,020 ft.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. Cg. 6,200 ft.
Transwestern Oil Corp. No. 1 B. H. Dunlap, Sur. 179-181 (1½ mi. SW East Premont field). 18⅝-in. csg. 485 ft.; drlg. sh. 2,212 ft.

Kendall County

Geo. Dorsey No. 1 Flanagan, J. Sweeney Sur. No. 12. S.D. 350 ft.
Millican and Norman No. 1 Werner, J. F. Torrey Sur. T.D. 747 ft.; run csg.

Kerr County

H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 345 ft.

Kimble County

Phillips Pet. Co. No. 1 Mudge, C.C.S.D.& R.G.N.G.R.R. Sur. No. 9. Drlg. L. 1,-876 ft.
Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. Drlg. L. 1,000 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. Drlg. sh. 4,878 ft.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S of Ezzell). R.U.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.
Fred Pederson et al No. 1 Brown, David Hudson Sur. Drlg. sh.&sd. 1,812 ft.
A. H. Tarver No. 1 J. W. Lawhon. Drlg. sh. 2,625 ft.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. 10¾-in. csg. 20 ft.; S.D. 494 ft. for wtr.
Bailey et al No. 1 McDermott & Co., Mark Kelly Sur. Drlg. sdy. sh. 1,-537 ft.
R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.
Hanna et al No. 2 West, C. O. Ragland Sur. S.D. 2,616 ft.
Holland Oil Co. No. 1 Wallace, Cameron Co. Sch. Ld. Sur. Drlg. 810 ft.
N. P. Oil Co. No. 1 Griffith, J. Poitevent Sur. No. 49. Drlg. 502 ft.
Smith & McDannald No. 1 Rooney, Casa Blanca gr. M.I.M.
Richardson Pet. Co. No. 1 Geo. West, Blk. 406 (3 mi. NW Geo. West). T.D. 3,-303 ft.; abd.
V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.
Tetbo Oil Co. No. 1 Ybanez, J. Poitevent Sur. T.D. 3,610 ft.; abd.
Wallace & Jones No. 1 Burrows, Eneas Smith Sur. T.D. 520 ft.; fsg.

McMullen County

Heard-Hall and Young No. 1-A Byrne, Geo. Pittuck Sur. No. 7. Loc. abd.
Red Bank Oil Co. No. 1 Nueces Ld. & Livestock, J. McGrain Sur. R.U.
Wm. Spice, Jr., No. 1 Edrington, A.B.& M. Sur. 57 (5 mi. E Loma Alto). Rig.

Maverick County

L. M. Lockhart No. 1 Ashbrook, W. J. Phillips Sur. No. 83. Drlg. 2,287 ft.
Wellington Oil Corp. No. 1-B Chittim, I. &G.N. Sur., Blk. 6, sec. 98, 14 mi. SE of Eagle Pass. Drlg. 839 ft.

Medina County

J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. T.D. 1,250 ft.; P.B. 1,-080 ft.; cmtd. csg. 1,021 ft.; shot 1,-024-80 ft.; swbg.
Geo. Hayes and Tarver No. 1 Mann, J. H. Isbell Sur. No. 10. S.D. 440 ft.
L. W. Stieren No. 1 Haegelin, Dolly Smitherman Sur. S.D. 335 ft.
Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. T.D. 935 ft.; S.D.
Ziegler et al No. 1 Wiemers, F. Thurmm Sur. Drlg. 670 ft.

Milam County

Fritz Fuchs No. 2 Stork, Maria J. Delegado Sur. T.D. 940 ft.; abd.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.; C.O.; set 7-in. csg. 1,167 ft.; S.D. 1,520 ft.

Nueces County

Seaboard Oil Corp. No. 1 F. C. Lockett, E. Villareal Sur. T.D. 7,510 ft.; abd.
Union Prod. Co. No. 1 Minnie Brown (Aqua Dulce area). S.D. 10,741 ft.

Refugio County

I. J. Allen No. 1 Rooke, Aldrite Sur. O.W.D.D.; T.D. 4,568 ft.
I. J. Allen No. 2 Rooke, Jose Miguel Addrite and Jose Maria Aldrite 6¼ Lge. T.D. 6,907 ft.; P.B. 5,440 ft.; perf. csg. 5,395-5,400 ft.; flwd. 30 bbls. dist.; ¼-in. ck.; W.P. 2,100 lbs. sqzd. off perf.; reperf. 5,431-33 ft.; S.O. and S.W.; reperf. csg. 5,460-70 ft.; I.P. 25 bbls. dist.; ¼-in. ck.
I. J. Allen No. 3 Rooke, Jose Miguel Aldrite and Jose Marie Aldrite Sur. (933 ft. SE of No. 2). Loc.

San Patricio County

Humble O. & R. Co. No. 1 B. G. Henry, 4th Addn., Taft Farm Lds., Blk. 8, sec. 27, 2 mi. NE of Taft field. Cd. sd. salty taste 5,113-22 ft.

Starr County

J. A. Clopton et al No. 1-A Bass, F. H. Rodriguez, Porc. 86, Lot 5, Clopton Subd. (1,500 ft. SW of No. 1). T.D. 3,516 ft.; abd.
Hagan and Stewart Oil Co. et al No. 1 Salinas, Antonio Canales Salinas gr. Loc.
Sun Oil Co. No. 1 Lopez, N. Vela Sur., Porc. 82. Spd.
Sun Oil Co. No. 1 Smith, A. J. Smith Sur. R.U.
W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc. 89. Drlg. sh. 2,010 ft.

Travis County

L. G. Priest No. 1 Mazock, J. M. Leavy Sur. No. 5. S.D. 646 ft.
R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. T.D. 1,066 ft.; 5-in. csg. 1,009 ft.

Webb County

Garrison & Paris No. 1 Benavides, Hale Subd. of M. Arispe Gr., C Blk. 107. 5½-in. csg. 1,009 ft.
Merle E. Morton No. 1 Laurel Bros., Sur. 333, Blk. 9. T.D. 2,025½ ft.; sd. S.O.; 7-in. csg. 2,015 ft.; tstd. 4,000,-000 ft. gas and 8 to 10 bbls. oil; ½-in. ck.; T.D. 2,071 ft.; abd.
W. R. Nicholson No. 1 fee, M. Valpe Sur. Drlg. sd. 3,102 ft.
J. W. O'Byrne No. 1 Lacey, Mary E. Wideman Sur. S.D. 510 ft.

Williamson County

F. J. Anderson No. 1 Teichelman Absalam, Jett Sur. S.D. 900 ft.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 2,490 ft.; reported gas show at 2,250 ft.

Zapata County

C. H. Lewis No. 1-A Garza, Blk. 13, Sur. 413. T.D. 1,825 ft.; abd.
Thompson & Lowe No. 1 Ramirez, Blk. 6 Doyle Subd. of Porc. 18. Drlg. 815 ft.

EAST TEXAS

(Border counties)

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. T.D. 4,574 ft.; prep. deepen

Cass County

Harry Hanbury No. 1 Echols et al, SE cor. Echols tr., Wm. Mayes Sur. Drlg. 5,504 ft.
Texarkla Oil Corp. No. 1 Mayo, Bryant Holmes Sur. Drlg. 5,524 ft.
Texas Co. No. 2 Chatten Est., Wm. Myers Sur. Set 9⅝-in. csg. 2,175 ft.; drlg. 5,363 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Bodgett, Allen Urquhart Sur. Set 10¾-in. csg. 1,007 ft.; drlg. 4,160 ft.
Ark.-La. Gas Co. No. 4 Holland, Hanks Sur. Drlg. 5,561 ft.
Ark.-La. Gas Co. No. 1 Johnson, Alex. Johnson Sur. D.S.T. 5,984-6,018 ft.; ⅝-in. ck. bttm.; ½-in. ck. top; open 9 min. rec. est. 30,000,000 ft. gas; 11 jts. drlg. fluid; top 2 jts. mud and drlg. wtr. cut with gas; W.O.C. 6,154 ft.; cg. 6,114-34 ft.; G.&O.S.
Ark.-La. Gas Co. No. 1 Walker, Humphries Sur. Drlg. 3,800 ft.
T. Bell et al No. 1 Moseley, D. Lane Sur. T.D. 2,768 ft.; S.D.

Gulf Oil Corp. No. 3 Grubaugh, Coy Sur. Drlg. 3,174 ft.
Holcomb & Thomason No. 1-C Henderson, R. Bennington Sur. Drlg. 5,237 ft.
Phillips Pet. Co. No. 2 Beard, Bennington Sur. W.O.C. 1,062 ft.
Phillips Pet. Co. No. 2 Benefield, J. Hanks Sur. Drlg. 4,437 ft.
Shell Pet. Corp. No. 3 Schluter, Wm. Smith Sur. Drlg. 4,050 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; drlg 9,718 ft.

Sabine County

Hugo Allen No. 1 Bwoho, Isaac Low Sur. Drlg. 2,430 ft.
Pet. Heat & Power Co. No. 1 Jasper State Bank, McDonald Sur. T.D. 2,506 ft., sd.; S.D.W.O.

Shelby County

Center Oil Co. No. 1 Windham, A. H. English Sur. T.D. 3,422 ft.: set 6⅝-in. csg pmpd. 10 bbls. oil, 500 bbls. S.W.
W. A. Reddit No. 2 Pickering Lbr. Co. P. J. Loggins Sur. Set 7-in. csg. 2,920 ft.; T.D. 4,420 ft.; Woodbine sd. 2,-905-10 ft.; flwg. in pits; arng. dpn.

WEST TEXAS WILDCATS

Andrews County

Fuhrman Pet. No. 1 G. O. Ashton, sec. 12, Blk. A-42, P.S.L. Sur. Drlg. 615 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of south end of Fuhrman pool. Prep. treat 4,780 ft.

Cochran County

Texas Co. No. 1 D. S. Wright, Lge. 115, Lab. 23, Potter Co. Sch. Lds. Freeing D.P. 4,555 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 89, Blk. W, T.&P. Sur. Swbg. 1,861 ft.

Crane County

Gulf Oil Corp. No. 4 McKnight, sec 8, Blk. B-21, P.S.L. Sur. Fsg. 6,082 ft.
Gulf Oil Co. No. 2-B State-Lassiter, University Sur., Blk. 30, sec. 27. Drlg. 1,825 ft.
Texas Co. No. 1-G Univ., sec. 7, Blk. 30, Univ. Sur. Drlg. 3,042 ft.

Crockett County

Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. S.D.R. 1,906 ft.

Culberson County

Harry J. W. Niehaus No. 1 fee, Blk. 109, sec. 13, P.S.L. Sur. 1,800-ft. test. S.D. 2,500 ft.
Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. Drlg. 1,560 ft.

Ector County

Fields et al No. 1 Owenwood, sec. 6, Blk. 44, T.&P. Sur. Loc.
Landreth Oil No. 1-P Scarbauer, sec. 11, Blk. A, P.S.L. Sur. S.L. 2,405 ft.
Sinclair Prairie No. 3-A Johnson, sec. 37, Blk. 43, T.&P. Sur. Tstg. 4,520 ft.
Sinclair Prairie No. 2-B P. Moss, sec. 40, Blk. 44, T.&P. Sur. Drlg. 3,570 ft.
Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. D.&A. 4,329 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Fsg. 3,-571 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Fsg. 5,960 ft. last report.

Gaines County

Osage Drlg. Co. No. 1 B. E. Miller, sec. 281, Blk. G, W.T.R.R. Sur. Drlg. 4,-765 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 7,011 ft.

Hockley County

Gulf Oil Co. No. 2 Mallett, Lge. 34, Labor. 25, W.O.C. 4,822 ft.
Sid W. Richardson No. 2 Slaughter, Lge. 39, Labor 58, Maverich Sur. Drlg. 4,724 ft.
Skelly Oil Co. No. 1 Elwood Est., Howard C.S.L. Sur., Lge. 15. Drlg. 4,993 ft.

Howard County

Anderson & Prichard No. 1 H. Hyman Est., sec. 85, Blk. 29 W.&N.W. Sur. S.D.R. 15 ft.
Lockhart Pet. Corp. No. 2 Robert Scott, W.&N.W. Sur., Blk. 29, sec. 86. C.O. 3,070 ft.
W. B. Powell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. Drlg. 2,655 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 4,740 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 4,380 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield S.D. 3,742 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. Prep. recmt. 4,450 ft.

Martin County

W. D. Anderson No. 1 J. R. Vance, sec. 9, Blk. 36, T.&P. Sur. D.&A. 4,005 ft.
T. G. Shaw No. 1 H. H. Wilkerson, sec. 35, Blk. A, Bauer & Cockrell Sur. Spd.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. S.D. 1,270 ft.

Pecos County

J. N. Gregory et al No. 1 Humble-O'Niell, H.&G.N. Sur., Blk. 10, sec. 74. Lost hole; skidded 20 ft. east; rng. 10-in. 700 ft.
J. D. Kugle, Jr., No. 1 H. L. Cordz, sec. 101, Blk. 8, H.&G.N. Sur. Drlg. 2,-010 ft.
Magnolia Pet. Co. No. 1 McKee, P.B. 6,197 ft.; P.B. 6,180 ft.; P.B. 5,300 ft.; prep. ream hole.
E R.. Minshall et al No. 1 Haynie, sec. 28, Blk. 146, T.&St.L. Sur. Drlg. 3,267 ft.
S. Thompson No. 1 Elsmore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 7,278 ft.
Union Oil & Mining Co. No. 1 First Natl. Bnk. of Ft. Stockton, sec. 6, Blk. 9, H.&G.N. Sur. S.D. 1,760 ft.

Reagan County

Culbertson & Irwin No. 1 J. F. Nunn, sec. 26, Blk. B, L.&S.V. Sur. Spd.

Reeves County

Frankley & Rice No. 1 W. A. Tunstill, sec. 10, Blk. 56, T.&P. Sur. Drlg. 430 ft.
Imo Oil Co. No. 1 Papham, sec. 18, Blk 54, T.&P. Sur. U.R. 2,380 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. S.D.R. 2,860 ft.
Gursham-Hunter No. 1 C. M. Wellborn, sec. 142, Blk. 25, H.&T.C. Sur. Drlg. 1,730 ft.
Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. P.B. 2,500 ft.; S.D.

Sterling County

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. S.D.R. 2,890 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 4,774 ft.
E. C. Lawson No. 1 Ada Pumphrey, Ell Chandlers Sur. D.&A. 3,534 ft.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. S.I. 5,-176 ft.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, sec. 22, Blk. B-2, C.C.S.D. & R.G.N.G. Sur. 2,500-ft. test. Drlg. 1,300 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch Sur. S.D. 4,495 ft.
J. B. Watson No. 1 Llano, C.S.L. Sur., sec. 16. 500-ft. test. Drlg. 186 ft.

Val Verde County

A. W. Little No. 1 R. W. Sellers, sec. 34, H.&G.N.R.R. Sur. 1,500-ft. test. Drlg. 200 ft. last report.

Ward County

J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. S.D.O 5,085 ft.
Peerless O. & G. No. 1 F. M. White, sec. 36, Blk. 1, H.&T.C. Sur. Drlg. 2,010 ft.
S J. Rixford No. 1 W. B. Crump, sec. 2 Blk. 34, H.&T.C. Sur. D.&A. 3,057 ft.

Winkler County

J. R. Sharp No. 1 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. C.&P.
J. R. Sharp No. 2 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

R. H. Gill No. 1 S. J. Doxon, sec. 611, Blk. D, Gibson Sur. Prep. D.D. 5,500 ft.
Gulf Oil No. 1 Lucy K. Moore, sec. 897, Blk. D. Tstg. 5,043 ft.
Helmerich & Payne No. 1 S. O'Dowd, sec. 896, Blk. D, J. H. Gibson Sur. Prep. treat 5,035 ft.
Magnolia Pet. Co. No. 1 Lynn, sec. 770. Drlg. 4,150 ft.
Phillips Pet. No. 1 W. A. O'Brien, sec. 442. Drlg. 4,960 ft.
S. C. Yingling et al No. 1 Nettie Barrier, sec. 6. S.D. 206 ft.

E. C. TEXAS WILDCATS

Anderson County

J H. Gardner No. 1 G. W. West, L. Hopkins Sur., 2 mi. SE of Denison Springs. Drlg. plug. 326 ft.
H. L. Hunt No. 1 Shaw & Cern, D. Parker Sur. W.O.C.; drlg. 4,649 ft.

Falls County

M. H. Hayes No. 1 A. Garrett, J. M. Sanches Sur., 2 mi. NE of Lott field. Pmp. 24 B.O.P.D.; T.D. 1,366 ft.

Franklin County

V. A. Hughes No. 1 W. E. Haydon, W. Landrum Sur., 1 mi. SE of Hagansport. R.U.P. 4,345 ft.

Freestone County

G. Shryock No. 1 M. S. Clark, M. D. Canton Sur., 8 mi. NW of Teague. M.I. heavy rig 205 ft.

Grayson County

Epenhauser No. 1 J. M. Rogers, L. Kelly Sur., 1½ mi. NE of Whitesboro. Drk.
O. L. McDougal No. 1 E. Jackson, Holland Coffee Sur., 7 mi. N of Pattsboro. M.I.M.
Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillers Sur., 1 mi. S of Collinsville. Fsg. 3,882 ft.

Gregg County

Humble-Gulf No. 1 Porter Hortor, H. G. Hudson Sur., 3½ mi. SW of Longview, 7,500-ft. test. Drlg. 3,405 ft.

Henderson County

McElreath & Suggett No. 1 T. L. Dean, C. M. Walters Sur., 1 mi. W of Athens. Loc.

Hill County

J. M. Russell No. 1 H. F. Holland, S. C. White Sur., 1 mi. SE of Abbott. Loc.

Houston County

Humble Oil & Ref. Co. No. 1 C. C. Hill, J. L. LaReviere Sur., Navarro Crossing field. D.&A. 3,935 ft.
Sun Oil Co. No. 1 R. S. and H. H. Dally, J. G. Thompson Sur., 3 mi. SE of Navarro Crossing. Tstg. 5,893 ft.; 25 B.O.P.D.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.
W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D.; W.O. 3,100 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. R.U.

Leon County

Lone Star Gasoline No. 2 G. W. Lee, R Hunter Sur., 5 mi. SE of Buffalo gas area. Comp.; 115,000,000 ft. gas dly.

Limestone County

J. S. Cosden, Jr., No. 1 J. J. Bower, J. Breeding Sur., NW part of county. D.&A. 1,595 ft.
Strowd Gas Co. No. 1 S. Adkins, A. Varrela Sur., 1 mi. W of Groesbeck. M.I.M.

McLennan County

Lisle Steele No. 1 C. H. Cherry, M Martinez Sur., 4½ mi. SE of Waco. S.D. 945 ft.
J. E. Thompson No. 1 F. E. Goodman, C. O'Campo Sur., 4 mi. S of Waco. D.&A. 1,070 ft.

Nacogdoches County

C. W. Voyles et al No. 1 M. E. Rider, O. W. Randall Sur., 3 mi. E of Caro. S.D. 4,065 ft.

Navarro County

B. T. Fearis No. 1 W. Montgomery, I. Redding Sur., 7 mi. S of Kerns. Tstg. 3,659 ft.; T.D.
Howze Oil No. 1 J. A. Jackson, R. C. Doon Sur., ½ mi. E of Powell. S.D. 1,729 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. Loc.
Parsons & Andree No. 1 F. H. Glass, E. E. Lawhorn Sur., 1¾ mi. SE of Point. S.D. 3,880 ft.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 500 ft.
Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 555 ft.
C. E. Whitehead No. 1 R. H. Ringwald, A Moore Sur., 1 mi. NW of Manchester. S.D. 630 ft.

Smith County

Combest et al No. 1 Dora Kendall; J. Williams Sur., 1¾ mi. SW of Jamestown. S.D.R. 3,210 ft.

Van Zandt County

W. S. King No. 1 Edna W. Watson, M. G. Whitaker Sur., 5 mi. S of Grand Saline. R.U.

NORTH TEXAS WILDCATS

Archer County

Fain-McGaha No. 1 McCrory G, sec. 44 A.T.N.C.L. Sur. 6⅝-in. csg. 4,720 ft.; O.S. 4,727-60 ft.; shot 40 qts.; pmpg. 10 B.P.H.
Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Testing at 5,105-16 ft.
Panhandle Ref. Co. et al No. 1 H. O. Prideaux, A. Rohus Sur. A-1126. Drlg. 3,480 ft.
Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; Tstd. S.W.; S.D.O.

Baylor County

J. Rogers No. 1 C. F. Elam et al, J. Smith Sur. A-285. S.D. 1,492 ft.
H. F. Wilcox No. 1 J. E. Fritz, D. Barlow Sur. A-10. Loc.

Clay County

L. T. Burns No. 1 Lyles, S.A.U.A. Sur. No. 403. Drlg. 4,750 ft.
Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12. 6,000-ft test 6⅝-in. 5,990 ft.; S.L. 5,994-6,016 ft.; drlg. plug and bailed O.S.; S.D. 6,-034 ft.
Wood Pet. & Roy. Corp No. 1 I. H Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D.O. 2,330 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 Mrs. J. D Putnam, T. W. Ward Sur. No. A-1089. B.S.S.O. 4,970-83 ft.; tstg.

Grayson County

Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillen Sur. Drlg. bkn. sd.&L. 3,872-90 ft.; S.D.; rig repairs.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, sec. 314, W.&N.W. Sur. Spudded and set surf. csg.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur. 4,000-ft. test; S.D.O. 1,930 ft.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, sec. 151, H.&T.C. Sur. Drlg. 2,710 ft.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. S.D. 822 ft.
J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. S.D. 3,777 ft.

Wichita County

Continental Oil Co. No. 1 State Ins. Asylum, Blk. 1, Cherokee Co. Sch. Ld. 6⅝-in. 5,075 ft.; SL 5,076-5,128 ft.; drlg. plug; flwd. 90 bbls. in 3 hrs.; trtd. with 8,000 gal. acid; est. 150 B.P.D.; tstg. R.U.S.T. to D.D.

Wilbarger County

Consolidated Oil Co. No. 1 Ancell, sec. 35, H.&T.C. Sur. Matl.
Target Drlg. Co. No. 1 W. T. Waggoner, sec. 27, H.&T.C. Sur., Blk. 6. Drlg. 2,500 ft.

Young County

Horwitz & Oldom No. 1 C. J. Taach B, sec. 248, T.E.&L. Sur. Drlg. 3,605 ft.; 6⅝-in. 4,113 ft.; G.L. 4,113-36 ft.; show oil; drlg. plug, small S.O.; S.D.O.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

Buckler No. 1 Jacobs, Kerr Co. Sch. Lds., Abst. 278. Tstg. 1,568 ft.
Evans No. 1 Garms, sec. 12, Blk. 1-11, H.&T.B. Sur. S.D. 968 ft.; T.D.
Hightower O. & R. Co. No. 1 Payne, sec. 31, H.&T.C. Sur. Fsg. 540 ft.
Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D.R. 415 ft.
Moore No. 1 Smith, Jno. S. Thomas Sur. No. 53, Abst. 897. W.O.C. 1,578 ft.
Whatley No. 1 Browder, C.T.R.R. Sur., Abst. 281. T.D. 1,095 ft.; S.D.

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test; C.O. 4,450 ft.; T.D.
Dobbs Oil Co. No. 1 Finley, sec. 75, Bayland Orphans Home Ld. Drlg. 978 ft.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains. Drlg. 3,-622 ft.
J C. Jackson et al No. 1 Thompson, 2 mi. S of Eula, sec. 30, B.B.B.&C. Sur. S.D. 1,645 ft.

Coleman County

Anzac Oil Corp. No. 1 Burk, A. Williams Sur. Est. 15 B.O.P.D. 2,458 ft.; T.D.
F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N¼ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.; S.O. 3,657 ft.; shot; blew in and lodged tools; fsg.
Garrett Oil Co. No. 1 W. S. Smith et al, 4 mi. SE of Coleman, J. Thiele Sur. H.F.W.; est. 2,000,000 ft. gas; U.R. 2,-200 ft.
Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. Prep. treat 2,825 ft.

Comanche County

Compton No. 1 Griffin, Blk. 2, Comanche Co. Sch. Lds. Drlg. 2,063 ft.
Elmore No. 1 Moorman, sec. 37, D.D.& A. Sur., 3 mi. NE of Sipes Spgs. Sp. & S.D.
Loraine No. 1 Haile, sec. 9, Blk. 3, H. &T.C. Sur. Fsg. 2,707 ft.
Sells Pet. Co. No. 1 Smith, sec. 12, Blk. 2, H.&T.C. Sur. P.B. 2,285 ft.; crooked hole.

Eastland County

Baker No. 1 Mullroy, sec. 1, Wm. Ahrenbeck Sur., 5 mi. NW of Rising Star. Drlg. 3,065 ft.
Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D.; wtr. 500 ft.
Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. Tstg. 3,098 ft.

Erath County

McGee Dev. Co. No. 1 Till Robinson, Wm. Ashworth Sur., 2 mi. SE of Desdemona. S.D. 1,750 ft.

Fisher County

Forest Dev. Co. No. 1 Morrow, sec. 48, Blk. 2, H.&T.C. Sur. Drlg. 3,120 ft.
Owens-Snebold & A. C. Varner No. 1 J. H. Millsap, 3,500-ft. wildcat, 2 mi. NW McCaulley. 330 SL 330 WL, sec 61-2, H.&T.C. Sur. Moving on larger rig; 530 ft.
T. G. Shaw Oil Corp. and Texas Co. No. 1 John Stribling, sec. 110, Blk. 3, H.&T.C. Sur. Drlg. 2,518 ft.

Haskell County

Algord Oil Co. No. 1 J. F. Jones, 330 ft.

from S and W lines, E. T. Roche Sur. No. 4, Abst. 525, Loc.
Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. S.D. 3,089 ft.; sulfur wtr.
Forest Dev. Co. No. 1 Bankers Life Co., J. F. Morgan Sur. No. 59. S.D. O. 3,850 ft.
Heenam & Coe No. 1 Jones, Corryell Co. Sch. Lds. Drk.
Marland Drake No. 1 Cob, J. F. Benson Sur. No. 96. Loc.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, sec. 191, Lemuel Andrews Sur. U.R. 1,750 ft.
Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38 B.B.B.&C. Sur. Drlg. 3,210 ft.
R. B. Farris No. 1 Chas. Donohoo, 220 ft from S and E lines, N½ sec. 5, B.B.B &C. Sur. Fsg. 2,090 ft.
Grisham-Hunter No. 1 Appaling, sec. 32, B.B.B.&C. Sur., 4 mi. SW of Stamford. Drlg. 2,418 ft.
Grisham-Hunter Corp. No. 2 E. D. Appling, 1,140 ft. fr. E L, 1,208 ft. S L. NW¼ sec. 32, B.B.B.&C. Sur. Set csg. 2,350 ft.; S.O.
S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ sec. 8-15, T.&P. Sur. Loc.
Humble O. & R. Co. No. 1 Huddleston, sec. 49, Blk. 18, T.&P. Sur. Drlg. 2,160 ft.
Pet. Producers No. 1 McDuff, sec. 32, Blk. 15, T.&P. Sur. Drlg. 1,508 ft.
S. B. Roberts Co. No. 1 Roy E. Prichard. 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell Subdiv. 2, G. Martinez Sur. 195. Loc.
Sinclair Prairie No. 1 Williams, sec. 40, Blk. 18, T.&P. Sur. M.I.M.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Drlg. 3,980 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test. S.D.O. 3,171 ft.
Forest Dev. & Helmerich & Payne No. 1 T. G. Hendrick, C sec. 1, A.B.&M. Sur. Show gas and oil cored 4,838-45 ft.; T.D. 5,056 ft.; set 7-in. to 4,818 ft. to test showing 4,819-37 ft. in Marble Falls; last report.
R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, sec. 38, L.A.L. Sur., 4,500-ft. test. Tstg. 2,250 ft.
J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. Drlg. 4,021 ft.
Jones & Stasney No. 1 Davis, sec. 50, Blk. 13, T.&P. Sur. Fsg. 1,198 ft.
D. W. Power No. 1 Black Ranch, C SE 80 ac. of NE¼ sec. 391, T.E.&L. Sur., Ellenburger test.

Stephens County

Lone Star No. 1 E. H. Brooks, 400 ft. from S and W lines, NE 200 ac. of sec. 54-7 T.&P. Sur. Tstg. 2,000,000 ft. gas 3,723-27 ft.
Lone Star No. 1 J. S. McKee, 660 ft. from N line, 660 ft. from W line, sec. 41-7, T.&P. Sur. U.R. 3,724 ft.

Taylor County

A. R. Forester et al No. 1 Frederickson, sec. 1, Guadalupe Co. Sch. Lds. Sur. No. 120. U.R. 2,322 ft.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., sec. 979, T.E.&L. Sur. Swbg. S.W. 4,070 ft.; T.D.
Jones & Stasney No. 1 C. T. Brockman 330 ft. S line, 330 E line sec. 95 Comanche Indian Sur. T.D. 4,706½ ft.; est. 1,000 to 1,500 B.O.P.D.; D.D. to 4,711 ft.; prep. test.
Marland-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. S.D. 4,085 ft.
Stasney et al No. 1 Hunt, sec. 965, T. E.&L. Sur. U.R. 1,628 ft.
White & Duncan No. 1 Raynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. U.R. 2,530 ft.

Canadian Fields

(Continued from Page 102)

In the Brownsville field, Kidd-Adams No. 1 Cheeseman, Lot 1, Concession 10, Bayham Township, Elgin County, finished high at 916 feet, after getting the gas sand around 885 feet. The usual depth of completion in the Brownsville field is between 930 and 940 feet after drilling about 30 feet of sand. Production was estimated 2,500,000 feet a day. Reed-Adams Development Co. No. 1 is starting in Lot 10, Concession 4, West Nissouri Township, testing a possible extension of the Brownsville field to the northwest. Western Ontario Gas Co. is starting a test in Lot 2, Concession 9, Bayham Township, Elgin County.

York Oil Operations

York Oil Co. of Vancouver, British Columbia, operating in South Turner Valley, at its annual meeting recently elected the following officers: President, Viggo Laursen; vice president and chairman of the board, H. K. Reed; manager and secretary, G. R. H. Anderson; assistant secretary, Dennis K. Yorath; directors, Homer C. Adams, R. M. Spence. York No. 1, in section 20-18-2w5, South Turner Valley, is drilling close to the lime, and the company is arranging to start No. 2, tentatively located some time ago in LSD 6, same section.

La.-Ark. Fields

(Continued from Page 93)

Shelby County

Pure Oil Co. has taken a new 7,000-acre block in Shelby County north and west of Center, spread over the John Inman, Jesse Amason, M. M. Van, Z. C. Walker and other nearby surveys. Humble Oil & Refining Co.'s holdings in this area now total about 15,000 acres.

NORTH LOUISIANA COMPLETIONS

Bossier Parish

Premier Investment Co. No. 3 Connell, total depth 375 feet, 20 bbls. per day.

Caddo Parish

Carney and others No. 1 T. Hart, total depth 1,038 feet, salt water and abandoned. W. D. Chew No. 3 Stiles, total depth 1,985 feet, 85 bbls. J. T. Driscoll No. 4 Pender, total depth 2,201 feet, 50 bbls. Magnolia Petroleum Co. No. 27 Dillion Heirs, total depth 1,625 feet, 25 bbls. Midfield Oil Co. No. 5 Muslow, total depth 1,560 feet, 40 bbls. J. F. Mitchell No. 2 Muslow, total depth 1,649 feet, 15 bbls.

Claibourne Parish

H. Fotiades No. 2 Whitman, total depth 5,259 feet, 60 bbls. Sells Petroleum Co. No. 1-B C. L. Patton, total depth 5,327 feet, 8 bbls. Union Production Co. No. 1-A Sims, total depth 6,050 feet. 42,000,000 feet gas per day.

LaSalle Parish

Cherrie Oil Co. No. 1 Uranian Lumber Co., dry and abandoned at 1,529 feet.

Morehouse Parish

Union Production Co. No. 58 Crossett, total depth 2,254 feet, 10,000,000 feet gas per day.

Sabine Parish

Sam Sklar-Sugars No. 1 M. Procells, dry and abandoned at 2,908 feet. Smiddy & Watson No. 1 Sabine Lumber Co., total depth 2,580 feet, 75 bbls. Hunter Co. No. 1-A Louisiana Long Lumber Co., total depth 3,015 feet, salt water and abandoned.

Union Parish

Inabart & Pipes No. 2 Peek, total depth 2,144 feet, 3,500,00 feet gas per day.

SOUTHERN ARKANSAS COMPLETIONS

Miller County

Gerhig No. 1 Mitchell, total depth 6,172 feet, 234 bbls., 12 hours.

Union County

R. T. Adams No. 1 Justiss, total depth 7,642 feet, 600 bbls. per day. Alice-Sidney No. 4 Powledge, total depth 7,620 feet, 350 bbls. per day. Lion Oil & Refining Co. No. 1 Clarence, total depth 7,673 feet, 32 bbls. per hour; No. 1-D, total depth 7,640 feet, 1,040 bbls. per day; No. 1 Marcus, total depth 7,720 feet, 209 bbls. per day; No. 5 Mayfield, total depth 7,725 feet, 30 bbls. per day; No. 6-B Morgan, total depth 7,680 feet, 25 bbls. per day. Marine No. 3 Caloway, total depth 7,800 feet, 345 bbls. per day. Phillips Petroleum Co. No. 3 Marks, total depth 7,800 feet, 181 bbls. per day.

Kansas Fields

(Continued from Page 83)

1,355 feet. Ralph Wixson No. 5 Dohren, SE SW NE section 11-25-3, was drilling below 2,100 feet.

Ness County

Continental Oil Co. No. 1 Shiner, C W half W half SE section 13-18-26w, Aldrich pool, Ness County, was completed for potential of 1,086 bbls. of oil. It topped Mississippi lime at 4,448 feet, total depth 4,490 feet, was treated with acid and pumped 181 bbls. of oil the first four hours and 194 bbls. the next four hours.

C. L. Carlock and J. C. Shaffer No. 1 Smith, C SW SE section 11-17-25w, was a rig.

Harvey County

T. C. Johnson No. 1 Dyck, C SE NE section 19-23-3w, Harvey County sector of the Burrton field, had pay at 3,336-41 feet, total depth 3,344 feet, and was completed for a 15-bbl. minimum well.

E. J. Shaffer No. 1 LeCleve, NW SE SE section 18-23-3w, had dug pits.

Sedgwick County

National Refining Co. No. 1 fee, SE NE SE section 36-27-2e, an old well in the South Andover pool, was deepened from 3,098 feet to Arbuckle lime at 3,205 feet, total depth 3,218 feet, plugged back to 2,501 feet, was shot and produced 1,000,000 feet of gas, recompleted.

Rooks County

Sunray Oil Co. No. 1 Senecal, SE SE SW section 26-10-19w, an old well in the Zurich pool, Rooks County, was deepened from 3,495 feet to 3,609 feet, plugged back to 3,313 feet, deepened to 3,317 feet, acidized, pumped 10 bbls. of oil and 25 bbls. of water in 24 hours, water increased and it was abandoned.

Woodson County

Cleveland Oil Co. and others No. 2 Fidelity, SE NE section 34-25-15, Woodson County, had Mississippi lime at 1,422-47 feet, total depth, and was dry and abandoned.

Prairie States Oil Co. No. 1 Armstrong, SE NE SE section 20-23-15, was drilling ahead. Bunch Brothers No. 1 Boyd, NW NE SE section 29-25-14, was rigging up machine. C. L. Sheedy No. 9 Lipton, NE SW NW section 28-25-14, had spudded. Drillers Oil & Gas Co. No. 1 Steinforth, SW SW NE section 13-26-14, was a machine.

Other New Work

Aylward No. 1 Schlegel, C NE SW section 1-18-16w, Otis field, Rush County, was moving in material for a rotary test.

Atlantic Refining Co. No. 1 Daugherty, SW SW NW section 33-17-10w, Stumps area, Ellsworth County, was building rotary rig.

Oko Oil Co. No. 11 Lovett-McNeil, NW SE NE SW section 22-23-13, Greenwood County, was drilling below 320 feet.

United Production Co. No. 1 Lowe, SW SW NE section 35-29-35w, Hugoton gas field, Grant County, was a rotary rig.

California Fields

(Continued from Page 78)

feet of 5½-inch liner including 98 feet of perforated landed on bottom. A week or so ago it flowed for several hours at the rate of 150 bbls. a day of 17.3 gravity but did not seem to have sufficient kick to result in a sustained flow. This well is northwest of similar shallow drilling by Standard and Tide Water Associated Oil Co., both of which have completed several small producers in the shallow zone.

Montebello

McVicars & Rood have completed their second producing well in the western extension of the Montebello field flowing 720 bbls. of 35.3 gravity cutting 3 per cent daily through a 45/64-inch bean from the sixth zone at 6,259 feet. This producer, located south of No. 1 Manz, shows a tubing pressure of 150 pounds and a casing pressure of 450 pounds. The hole was finished with 70 feet of 5¾-inch liner including 59 feet of perforated. St. Helens Petroleum Co., discoverer of deeper production in the west end of the field, made a formation test on No. 2 Eggleston in the fifth zone and got a wet job due to bottom water. This well, which flowed 2,269 bbls. per day cutting 50 per cent, has been bottomed at 5,710 feet but will be plugged back. Drilling operations have shown a consistent increase in this area for the past few months and will register a further acceleration. Standard Oil Co. is grading for two wells, No. 1 Kaufman fee and No. 3 Harvey. Standard No. 1 McDonald, drilled on acreage leased from St. Helens Petroleum Co., is being prepared for completion and should be finished in the sixth zone within a few days. Two new operators, Columbia Oil Co. and Reservoir Oil Co., entered the field this week and will begin active work immediately.

Coastal Area

Drilling in the Santa Maria Valley field, unlike several other districts, has shown a consistent decline during the past two months and will continue to be rather inactive until conditions improve. A certain quantity of drilling will be done during the next several months due to lease requirements. Production has been averaging less than 2,000 bbls. per day for two months due to the inability of marketers to find an adequate market although the posted price is abnormally low. During the week Greathouse Oil Co. completed No. 1 Fortier flowing 720 bbls. of 16.2 gravity from 4,273 feet. Top of the Monterey was logged at 3,965 feet and the hole was finished with a 7-inch water string cemented at 3,970 feet and 305 feet of 5½-inch liner including 304 feet of 180-mesh perforations. The Franciscan basement was found at 4,260 feet indicating the company drilled 13 feet into the schist to be certain.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City; Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Aug. 13 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	1,000	72	69⅝	72	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$2.00	114⅞	51½	125½	75
27⅜	17¾	5,300	24⅛	23	23	Atlantic Refining	2,663,999	$25	25cQ	9-15-38	1.00	37	18	35⅛	26⅝
23⅜	12⅛	4,100	20⅝	18¾	18¾	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	20,100	19⅞	17½	17⅝	Barnsdall Oil Co.	2,250,344	$5	25cQ	8-1-38	1.00	35¼	10	28¼	14⅛
10¾	7	18,500	10½	9⅛	9⅛	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	8-15-38	.90	17⅞	7	17¼	11½
35¾	21¼	7,300	35¼	31¾	32	Continental Oil of Delaware	4,682,583	$5	25cQ	9-30-38	1.50	49	24	44⅞	28⅛
9¾	5	11,400	9¼	7¾	7⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	4,500	19⅝	17¼	17½	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	10⅝	700	16⅛	15⅛	15⅛	Mission Corporation	1,382,945	$10	$1	6-29-38	1.25	34	15	29⅞	16¾
23	14⅛	7,800	19½	17	17	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	(‡)	41⅝	17⅝	75½	19⅞
14⅞	9	19,600	11⅜	10⅛	10¼	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.00	22⅞	8	18	12⅛
15⅞	10¼	1,000	14⅝	13	13	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11⅜	23½	11⅜
9¼	7	100	7¾	7¾	7¾	Pan American Pet. & Trans.	4,702,945	$5	$1 •	12-21-37	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	16,800	43¾	39⅜	39¾	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-38	2.75	64	30⅛	52⅝	33⅛
25⅜	15	3,900	24⅜	22¼	22¼	Plymouth Oil Co.	1,029,800	$5	35cQ	6-30-38	1.65	29⅞	13	27⅜	11⅞
13½	8¼	20,800	12⅛	10⅝	10⅝	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
8⅞	5	21,400	8⅝	7½	7¾	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	2,900	24¼	22	22	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-38	1.00	54⅛	16	44	30½
18⅝	10	4,200	17⅜	15⅝	15⅜	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.00	34¾	14⅞	28¼	14⅜
34⅜	18½	2,900	30¼	27¼	27¼	Skelly Oil	1,003,949	$15	50c	6-25-38	1.50	60⅝	26½	47⅜	19½
16⅝	10¾	32,900	15¾	14⅜	14⅝	Socony-Vacuum	31,151,071	$15	25c	9-15-38	.80	23¼	13	17½	12⅛
34⅞	25½	9,000	33⅞	31	31⅛	Standard Oil of California	13,014,754	N.P.	35cQ†	9-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	7,800	32⅞	30½	30½	Standard Oil (Indiana)	15,267,030	$25	25cQ	9-15-38	2.30	50	26½	48½	32¾
35½	22½	200	35	35	35	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
58⅜	39¾	19,500	57⅞	52¾	53⅛	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
59	45	800	56½	56	56	Sun Oil	2,316,484	N.P.	25cQ	9-15-38	$1 & 8% Stk.	77½	44½	91	70
4¼	1¾	13,300	4	3¼	3¼	Superior Oil Corp.	1,388,079	$1	....	....	....	7¾	1½	6¾	3
49⅝	32⅝	23,400	49	44½	44⅝	Texas Corp.	10,875,006	$25	50cQ	7-1-38	2.25	65⅛	34¾	55¼	28⅞
5¼	2⅝	6,300	4⅞	4⅜	4⅜	Texas Gulf Producing Co.	888,137	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
12½	7	9,800	12½	11⅛	11¼	Texas Pacific Coal & Oil	888,237	$10	10c	9-1-38	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	7,100	15	13⅞	13⅞	Tide Water Associated	6,369,175	$10	25cQ	6-1-38	1.20	21⅝	13⅛	21⅜	14¾
22½	17⅛	2,500	21⅜	20⅞	21	Union Oil of California	4,666,270	$25	30cQ	8-10-38	1.40	28¼	17½	28½	20¾
23½	10	500	22¼	21⅞	21⅞	Union Tank Car Co.	1,200,000	N.P.	30cQ	9-1-38	1.60	31½	22	31⅝	22⅝
3½	1⅝	2,800	3½	3	3	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	6¼	1¾	5¼	2¾

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock

New York Curb Exchange

1938 High	1938 Low	Week ending Aug. 13 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11⅜	4	22,800	11⅜	10	11	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.40	10	6⅝	..	..
10¼	5⅛	1,100	7¾	6⅞	7¼	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	29	250	30¼	29½	30¼	Buckeye Pipe Line Co.	200,000	$50	25c	9-15-38	3.75	51½	36	50	39¾
113	97	100	112	111¾	111¾	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-27-38	7.00	123	95½	124¾	105
11	7¾	3,600	9	8½	8½	Cities Service (new)	3,714,317	$10	....	6-1-32	....	5⅝	1½	7⅜	3
2⅜	⅞	3,300	1¾	1⅜	1½	Cosden Petroleum	462,551	$1	....	....	....	5½	1½	4½	1½
27½	17½	3,900	23¼	21¼	21⅜	Creole Petroleum	6,975,383	$5	50cSA†	6 10-38	1.00	38¾	20¼	39	19⅞
10¼	5½	3,200	10¼	9	9⅜	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18⅛	9
3½	2	100	2⅝	2⅝	2⅝	Derby Oil & Refining	263,162	N.P.	....	....	....	8⅜	2¼	6¾	1⅞
31	22	50	23½	23½	23½	Eureka Pipe Line	50,000	$50	50c	8-1-38	4.00	47½	24½	47½	38½
46⅞	33	5,900	46⅞	42⅝	43	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-38	1.00	63½	33	59	36
72⅝	56	4,900	70½	66½	66½	Humble Oil & Refining	8,987,840	N.P.	37½c	7-1-38	2.00	87	54⅞	80	57
19½	15	2,700	17	16⅝	16⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19¾
9¼	6⅝	No sales	..	..	..	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅜	9¾	5½
31¼	23	3,500	26⅜	25⅝	25⅜	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3	100	3½	3½	3½	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	1,100	23	22⅛	22⅛	Lion Oil Refining	434,820	N.P.	25cQ	7-25-38	1.50	34	12½	17⅜	7⅜
10¼	6⅝	3,200	10	9½	9¾	Lone Star Gas	5,533,747	N.P.	20c	8-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	6½	1,100	8¼	7⅝	7⅝	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	9-15-38	.50	15¼	6¾	15⅜	9⅞
9¼	6⅜	800	9¼	8¾	8¾	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5¾	4½	400	5⅜	5⅜	5⅜	Mountain Producers	1,593,584	$10	30cSA	6-15-38	.60	7⅞	4⅛	8⅜	5
14⅝	11⅝	2,200	11⅞	11⅝	11⅞	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-38	1.00	19½	12	23	17⅜
9¼	7¼	300	7⅞	7½	7½	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15¾	9¼
2⅝	1½	No sales	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅜	6¼	4¼
6	4	100	5	5	5	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	3¾	7,800	4⅞	4½	4⅝	Pantepec Oil	2,441,142	$1	....	....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	300	2¾	2½	2½	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	900	3¼	3⅛	3⅛	Ryan Consolidated	296,931	N.P.	....	....	....	6½	2¼	4¾	1⅞
5⅜	3⅝	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	700	37¼	36½	36½	South Penn Oil	1,000,000	$25	50cQ†	6-30-38	3.65	56	35	44	32½
22¼	19	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	7-1-38	2.00	42	20	60	44
18¾	15	4,000	17⅞	17¼	17⅞	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-38	1.50	21⅛	14¾	23⅜	17⅛
7¼	6⅛	No sales	..	..	..	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22¾	16¼	700	22¼	21⅛	21⅛	Standard Oil of Ohio	753,740	$25	25c	6-15-38	1.50	45	16	40	21⅜
3¼	2⅛	2,600	3	2⅝	2¾	Sunray Oil	2,006,176	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
5	3½	700	4⅝	4½	4½	Texon Oil & Land	936,024	$2	15cQ	6-30-38	.45	7⅝	2	9¾	5⅜
7⅝	4¼	1,800	6⅝	5¾	5¾	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	2¾	10,900	4¼	3¾	3¾	United Gas Corp.	7,818,959	$1	....	.....	....	13⅜	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

GEORGE A. HILL, JR., president of the Houston Oil Company, Houston, Tex., has returned from a two weeks' pleasure trip to Monterrey, Mexico. He was accompanied by his family.

HOWARD H. GREENE, vice president of the Kendall Refining Company, Bradford, Pa., piloted the plane which carried mail from Bradford to Buffalo in observance of the ceremonies during Air Mail Week.

F. P. RUSHMORE, agent for the Gulf Oil Corporation in Denver, Colo., will be transferred to Tulsa, September 1, to become head of the Gypsy division land department, according to announcement of RUSH GREENSLADE, vice president. He will succeed B. F. BRIDGES, who has been transferred to the Indianapolis division.

ED HARMON, chief scout for the Seaboard Oil Company in Fort Worth, Tex., is having an outing in the Ozark Mountains of Missouri.

W. M. IRISH, III, vice president of the Atlantic Petroleum Purchasing Corporation, Dallas, Tex., is in North Carolina with his family.

A. F. McKEE, engineer and geologist of New York, is spending several days in the Gulf Coast territory at Houston and Corpus Christi, Tex.

AL TOWNSEND, of the lease and records department of the Carter Oil Company in Tulsa, has been transferred to the Shreveport, La., office of the company.

W. T. WALLACE, vice president of the Gulf Oil Corporation, New York, is on an extended vacation trip to Wisconsin, Canada, and other northwestern regions.

DAVID GRIBBEN, chief geologist for the General Petroleum Corporation in the San Joaquin Valley, is on vacation at Florence Lake, Calif. DONALD PRIEST is subbing for him.

REX L. DAWSON, eastern division superintendent of production for the Carter Oil Company, with headquarters in the Illinois field, has been given leave of absence because of ill health and has gone to St. John's Hospital in Springfield, Ill., to recuperate.

L. R. HOLMES, of the refining department of the Texas Company, with offices in Los Angeles, Calif., recently completed 35 years of continuous service with the company. B. E. HALLORAN, of the Wilmington, Calif., works, has completed 30 years' service, and C. V. CHANDLER, of the purchasing department in Los Angeles, has completed 28.

R. J. ST. GERMAIN, independent oil man and geologist, Houston, Tex., is in the lake district of northern Minnesota and Canada.

RALPH FORCH, Wilshire Oil Company; O. C. FIELD, O. C. Field Gasoline Corporation; D. T. STAPLES, Pacific Western Oil Company; H. J. MARCH, Signal Oil & Gas Company; L. L. AUBERT, Bankline Oil Company; WILLIAM WHALEY, Barnsdall Oil Company; EARNEST PYLES, Hancock Oil Company; ASHLEY DEWITT, Severns Drilling Company, and L. A. CRANSTON, Honolulu Oil Corporation, have been elected directors of the United Landowners Association, Inc., recently formed to protect landowners and operators' interests in tideland matters. Mr. Forch, Mr. Field, and Mr. Staples are president, vice president, and secretary respectively.

H. H. DIEVENDORFF, superintendent for the Petroleum Securities Company in the San Joaquin Valley of California, will move next week to a new office which his company has constructed on the Grimes lease near its well which recently discovered the new Eocene sand in the Coalinga field. A warehouse is under construction, signifying the company's intention to do extensive drilling in the area.

RICHARD B. PEDERSEN, recently appointed district sales engineer for the Continental Oil Company in Tulsa, was formerly chief engineer for the Cunard steamship line on round-the-world cruise service on the President Hayes and the President Adams. For 15 years he sailed about three times annually from San Francisco for Honolulu, Kobe, Shanghai, Hongkong, Singapore, Colombo, Bombay, through the Suez Canal, Genoa, Marseilles, New York and then back to San Francisco through the Panama Canal. Mr. Pedersen's new post with the Continental is his first important land job since his schooldays.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Charles A. Canfield, 65, early partner of E. L. Doheny in mining, later highly successful in oil, dies in Los Angeles, Calif., leaving an estate of $15,000,000. He opened the Coalinga field in California.

Another nickel advance gives Kansas-Oklahoma producers the long-looked-for dollar oil. The new price is $1.03 per barrel.

Hope Natural Gas Company buys all the Godfrey L. Cabot gas properties south of the Little Kanawha River in West Virginia, comprising 115 leases and 10,000 acres.

Shell Transport & Trading Company (Royal Dutch-Shell interests) buys California Oilfields, Ltd., properties in the Coalinga field in California, which have a production of 13,000 barrels per day.

20 YEARS AGO

Over 300 drilling wells in Okmulgee, Muskogee and Waggoner counties in Oklahoma, are idle because of a lack of boiler water. The drought has been a long one.

Northwestern Pennsylvania Oil Producers Association is organized in Bradford, Pa., with Frank D. Wood of the Wood-Kennedy interests, as president.

Seventy Kansas City policemen chipped in to go into the oil business near Coffeyville, Kans. Their first well was dry, but their second well is a 25-barrel producer.

10 YEARS AGO

Sinclair Pipe Line Company plans to increase the capacity of its main line from the Mid-Continent to Chicago 50 per cent.

The Texas Company has ordered 450 miles of 24-inch line pipe for natural gas from one of the big pipe manufacturers. It will weigh 100,000 tons.

Clyde M. Bennett, of Shreveport, La., has been made executive head of the Vacuum Oil Company's oil production department. He will make his headquarters in Houston, Tex.

FRANK LEACH, member of the Shell Petroleum Corporation's geological staff in Tulsa, is on a month's vacation in Colorado.

H. S. CLARK, geologist for the Sinclair Prairie Oil Company, Fort Worth, Tex., has gone to Colorado to spend three weeks fishing for mountain trout.

WILLIAM HARROD, chief scout for Shell Oil Company in California, left his Los Angeles office last week for a tour of the producing districts of the San Joaquin Valley and the coastal fields.

JUDSON WOOD, vice president of the Mene Grande Oil Company, Caracas, Venezuela, is spending his vacation in the United States. He is in Texas at the present time, renewing acquaintances and inspecting operating developments.

RAY C. WHEELER, manager of the natural gas and gasoline operations and a director of General Petroleum Corporation, recently completed 20 years of active uninterrupted service with the company in California.

OTIS FENNELL, of Evergreen, La., and FRANK FAVA and PAUL MONTGOMERY, of Baton Rouge, La., are new petroleum engineers with the Louisiana Department of Conservation, following their recent graduation from Louisiana State University.

W. O. HEADLEY, of the Gilmore Oil Company, Los Angeles, Calif., has been appointed manager of lubricating oil sales and has taken over some of the work previously done by DANNY DEPAOLO, recently made manager of lubricating oil sales for the northern California division of the company.

PARAGRAPHS

L. C. SASS, formerly in the Mene Grande Oil Company's geological department in Venezuela, has been appointed resident geologist for the Kuwait Oil Company, in the sheikdom of Kuwait. The Kuwait Oil Company is jointly owned by the Anglo-Iranian Oil Company and the Gulf Oil Corporation.

E. W. JONES, Tulsa drilling contractor and oil producer, is recovering from a light stroke at Santa Barbara, Calif., his office reported this week. He and MRS. JONES were on vacation on the West Coast when he became ill. Mr. Jones moved his offices to Tulsa about six years ago, shortly after he became active in the St. Louis, Oklahoma, pool. With the Blackwell Oil & Gas Company as a partner, he drilled the No. 1 Ferguson which extended the Fish pool and caused considerable activity in that area in 1934. He has been active in the K.M.A. field in Texas and still has production in the East Texas area. He recently decided to reduce his drilling contracting activities and sold all but one rig.

A. L. DERBY, president of the Derby Oil Company, and MRS. DERBY, have returned to their home in Wichita, Kans., from an extensive vacation trip in Europe. Since leaving Wichita on June 22, they have visited England, Norway, Sweden, Denmark and Germany.

GLEN M. RUBY, chief geologist for Yacimientos Petroliferos Fiscales (Y.P.F.), Buenos Aires, Argentina, is visiting points in the United States for his company, which is owned by the government of Argentina. Mr. Ruby, who has been with the Y.P.F. for about one year, says he enjoys his work in Argentina. He formerly was connected with the Marland Oil Company and Cities Service Company and for years was engaged in consulting work in Los Angeles, Calif. He will return to Buenos Aires the latter part of September.

FRANCOIS DE BOULARD, an executive of the Omnium International des Petroles of Paris, France, is making a tour of American refineries, and is now in California. Mr. Boulard's headquarters are in Paris, but he spends much time in Rumania, where his company operates a refinery.

JOHN R. REEVE has been transferred from the Casper, Wyo., offices of the U. S. Geological Survey to the Tulsa office and promoted to the position of oil and gas supervisor for the Mid-Continent district. FOSTER MORRELL, who has been acting oil and gas supervisor, remains in Tulsa as deputy supervisor. THOMAS L. COLEMAN, district engineer, in the office of the oil and gas leasing division of the U.S.G.S. in Wichita Falls, Tex., has been transferred to Ardmore, Okla., with headquarters in the Gilbert Building.

D. R. ZACHARY, manager of the Liberty Pipe Line Company in Dallas, Tex., is on a pleasure trip in the Pacific Northwest.

E. L. WILSON, Dallas, Tex., vice president of the Maracaibo Oil Exploration Corporation, has gone to Connecticut, accompanied by MRS. WILSON, for his vacation.

HAROLD G. NEELEY, president of Iron Mountain Oil Company, Fort Worth, Tex., will be chief speaker at the second annual oil party of the Stamford, Tex., Chamber of Commerce August 25.

HAROLD HOOTS, chief geologist for the Richfield Oil Corporation, Los Angeles, has been staying in Bakersfield while ROLLIN ECKIS, head of the geological staff in the San Joaquin Valley, is on his vacation.

GEORGE C. WRIGHT, junior engineer, and LESTER B. SWAN and HAROLD DUNSON, apprentice engineers, have been transferred from the Ellinwood office to the Zenith office of the Stanolind Oil & Gas Company in the western Kansas area.

GEORGE E. GIROUARD, office manager of the Phillips Petroleum Company in Tulsa, accompanied by MRS. GIROUARD and their two sons, started last Saturday on a motor trip to Maine. He planned to visit Rock Island, Washington, and New York en route.

R. S. RIDGEWAY, of Mount Pleasant, Mich., will be in charge of oil production offices to be opened by the Cities Service Oil Company in Mattoon, Ill. J. L. FOSNESS, geologist, will assist him. A. F. MORRIS, Bartlesville, Okla., chief geologist, has been in Mattoon helping Mr. Ridgeway in the work of establishing the new offices.

Banker Turned Oil Man

Jay E. Crane, of New York, who last week was elected treasurer of the Standard Oil Company of New Jersey, affords another example of the banker who became an oil man. He succeeds R. P. Resor, who retired recently after 50 years of service with the company. Mr. Crane joined the Standard of New Jersey May 1, 1935, after having been in the Federal Reserve Bank for 20 years. He had been the New York manager of the United States treasury's exchange stabilization fund of $2,000,000,000. The Standard's treasurer will be 47 years old next month. After graduating from Yale in 1914 he worked for a short time on the Commercial and Financial Chronicle. He left that publication in December, 1915, to join the Federal Reserve Bank, then in its second year. In 1919 he was appointed assistant cashier and later manager of the foreign department. Be became assistant deputy governor and secretary in 1928, and two years later was appointed a deputy governor, a post which now is that of vice president. As deputy governor Mr. Crane was in charge of the relations between the Reserve Bank and its foreign central bank correspondents and had supervision over all transactions in gold and foreign exchange. Upon the establishment of the stabilization fund he took charge of its foreign exchange operations. Mr. Crane has visited the principal operations of the Standard in Europe and South America.

JAY E. CRANE

KARL HASSELMAN, Houston, Tex., president of the Salt Dome Oil Corporation, is spending his vacation in Canada.

H. E. BRETHSCHNEIDER, member of the Atlantic Refining Company's legal department in Tulsa, is recovering from illness in his home in Duncan, Okla.

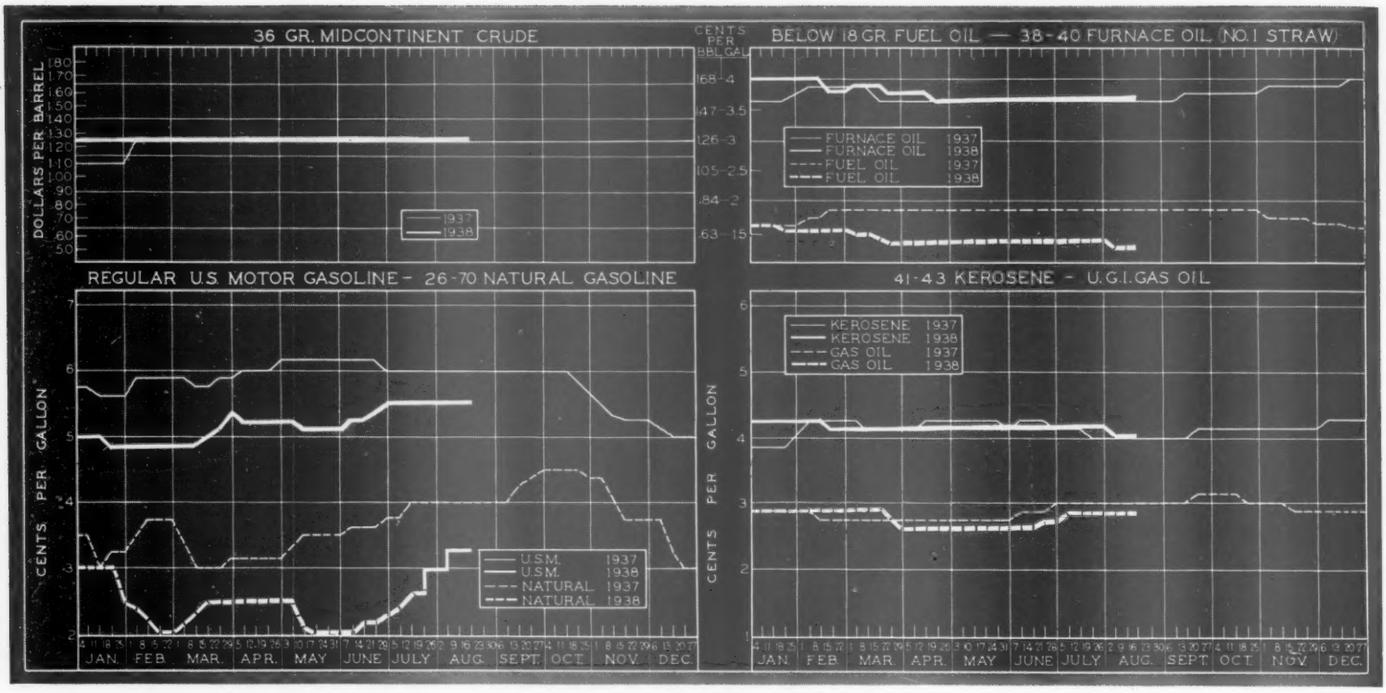
WILLIAM BARBAT, geologist for the Standard Oil Company of California at Taft, is taking the place of WILLIAM WINHAM, San Joaquin Valley chief geologist, while the latter is on his vacation.

R. M. BENARDEAU, vice president and resident manager for the Franco Dominion Development Corporation, a French company, with office in Oklahoma City, Okla., has left for Pittsburgh and New York on a business trip and vacation in the East.

ALFRED G. WHITE, chief of the petroleum economics division of the U. S. Bureau of Mines, last week visited the bureau's division office in Bartlesville, Okla., and other points in the Mid-Continent. His headquarters are in Washington, D. C.

BEN PILCHER, district geologist for the Texas Company in Amarillo, Tex., has been transferred to Fort Worth, Tex., to fill the position of assistant division geologist. H. G. WALTERS, of the Hobbs, N. M., district, will succeed Mr. Pilcher in the Amarillo office.

C. V. TERRELL, chairman of the Texas Railroad Commission, has been endorsed for renomination in the second primary August 27, by W. LEE O'DANIEL, Democratic nominee for governor of Texas, who said: "You wanted a business administration, and this is the way we do things in business."



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Group 3 Gasoline Market Lacks Life But Signs of Improvement Visible

By T. F. SMILEY

Failure to maintain the advance of .3 cent in the tank-wagon price of gasoline in the midwestern territory has had a dispiriting effect on the Group 3 refinery market. One week after announcing the increase the Shell Petroleum Corp. on August 10 returned to its former schedule. Other companies, which had followed Shell in the raise, followed it similarly in the drop to the old level. The Standard Oil Co. of Indiana did not join in the movement, declaring it unwarranted. The trade generally had predicted that without the Indiana company's cooperation the new postings would not hold. Some observers expressed belief that if the step had been taken last June, when the market was tight, it would have been successful.

Jobber Buying Slower

Slowing up in jobber buying was reported to have resulted from the reinstatement of former prices. There appeared to be an uneasy feeling that inability to hold tank-wagon prices at their higher level might be significant of weakness in the tankcar market, too. So jobbers not only saw no reason to buy for future requirements, but some figured it might be wise to cut purchases to actual day-to-day needs till the outlook became more clearly defined.

Refiners say the prevailing prices for gasoline enable them barely to break even. Only where especially favorable freight rates obtain is a profit possible. Although current quotations were described as far from firm, with concessions uncomfortably numerous, it was believed there would be no serious break, barring a cut in crude prices. While gratification was evinced over the huge reductions in the country's stocks, there was uneasiness over the rising trend in refinery runs. Continued price-cutting in the Tulsa area deepened the chaos in the retail market. After all unfavorable conditions had been considered, however, informed observers expressed belief that a firmer market lies a short distance ahead.

Natural gasoline manufacturers were interested in news that two major oil companies whose chief sales outlets are on the East Coast have decided to increase the volatility of their motor fuel and that others are likely to take similar steps. The action of these refiners is closely related to the octane race now on among leading brands of gasoline, and the practice is likely to spread, with consequent heavier demands upon manufacturers of natural gasoline.

Supply and demand were said to be well balanced in the natural gasoline market this week. Refiners now are making their fall specification motor fuel, and in a few weeks they will be blending for winter needs, requiring still larger proportions of natural.

Lubricants Slightly Better

Slightly better feeling was displayed regarding the lubricants, though it was apparent this division had a long way to go before it could attain a healthy tone. Rising prices and reduction of stocks in the Pennsylvania area were regarded as a hopeful sign, pointing to lessening of competition in middle western districts where Mid-Continent and Pennsylvania lubricants can seek trade on about equal terms.

Heating oils were holding well, under the stimulus of continued jobber buying for fall and winter. The No. 3 grade was exceedingly tight and hard to find. Kerosene was soft, as was No. 1 prime white distillate. The easier tone in these commodities was attributed to falling off in agricultural demand. The harvesting season is nearing its end, and fall plowing has not yet started. Wax was distinctly strong, with demand close on the heels of supply. The peak season for wax is at hand, as foreign demand should set in soon.

Refined Oil Market Barometer

Sharper cutbacks on refinery operations are imperative if the season of heavy gasoline consumption is to close with the market in a healthy condition. Insufficient curtailment of runs to stills has tended to neutralize the benefits of heavy reductions in stocks. Notwithstanding unfavorable business conditions, gasoline gallonage is maintained at a fairly high level. Natural gasoline is developing its seasonal strength.

MID-CONTINENT. Gasoline easy. Naturals firm. Kerosene soft. Heating oils steady.

EAST COAST. Gasoline rather slow. Heavy industrial oil improving. Little change in light fuels.

GULF COAST. Movement of gasoline and kerosene confined largely to contracts. Spot market dull.

CALIFORNIA. Gasoline demand lower than expected. Fuel and diesel weak.

PENNSYLVANIA. Neutrals and bright stocks in better position. Gasoline steady.

CHICAGO. Industrial fuels improving. Gasoline moderately firmer.

Heat and Minimum Contracts Relieve Motor Fuel Market

By H. STANLEY NORMAN

NEW YORK, Aug. 15.—Continuation of the heat wave in northeastern states last week renewed normal motor fuel consumption and invocation of fair trade contracts in New York relieved the retail distress to some degree.

Full success of the efforts to stabilize retail motor fuel marketing conditions in the counties surrounding New York was endangered by the companies declining to place their dealers under Feld-Crawford act minimum resale price contracts. Price cutting developed late in the week in some sections of Brooklyn on gasoline and other products of Sun Oil Co. Gulf Oil Corp., American Oil Co. and Sinclair Refining Co. dealers are among others who are not operating under fair trade act contracts at the moment. Socony-Vacuum Oil Co., Inc., launched the experiment with minimum resale price contracts covering branded products in New York, Kings, Bronx, Queens and Nassau counties. Colonial Beacon Oil Co., subsidiary of Standard Oil Co. of New Jersey, followed the action in the same territories setting minimum resale prices of 17½ cents per gallon on regular and 19½ cents for premium motor fuels. Several other marketers followed Socony-Vacuum and Colonial Beacon.

In general New York retail prices have settled at or near the minimums prescribed in the Feld-Crawford act contracts, but the entire program is threatened by continued price concessions on branded products in portions of Brooklyn. Some Sun dealers were reported offering 8 gallons for $1.22 and 6 for 98 cents in parts of Brooklyn.

The prolonged heat wave in the northeastern section of the country has stimulated automobile operation to a new peak for the summer season. Throngs are seeking relief at nearby beaches and at summer resorts in the Adirondacks, Catskills and other northern New York and southern Canadian retreats. Observers believe that, weather conditions permitting, the car driving will be sufficient to continue withdrawals from gasoline storage through the end of September. The importance of weather conditions on consumption was strikingly illustrated by addition of nearly 500,000 bbls. to stocks during the week of uninterrupted rain along the eastern seaboard and other parts of the country. Drafts on motor fuel stocks were resumed the following week when the hot weather drove many city and suburban dwellers to points offering surcease.

The motor fuel tankcar market, however, has not fully recovered from the depressing conditions prevailing in the latter part of July. Gasoline of 65-octane rating is reported available in almost unlimited quantities at most northeastern seaboard terminals at 6¾ cents to the tankcar trade while barge deliveries can be obtained at 6½ cents without difficulty. Some are still clinging to 7 cents but dealers asking the high of the range appear to be in the minority at present, whereas they were in the majority three weeks ago. Sufficient time remains, however, to reverse the trend of the tankcar gasoline market again before the demand tapers off for the fall and winter.

There is still considerable coastwise movement of motor fuel but some of the available tonnage is being converted to movement of light fuel oils. The open charter market on vessels continues to show evidence of strength. A tanker was reported chartered last week for movement of a gasoline cargo from the Gulf Coast to north of Cape Hatteras at 16 cents per barrel, an advance of a half cent over the last reported fixture. Open market charter rate for light fuel oil is approximately the same as that applying to the gasoline cargo, up 3 cents from the low of June and July. High octane gasoline as well as 65-octane material were offered more freely on the Gulf Coast, but prices were not materially changed. Occasional offerings of 65-octane gasoline at 5⅛ cents were heard, but mostly this grade attracted 5¼ cents with some asking 5⅜ cents per gallon for coastwise shipment. Exporters were quoting 5⅜ to 5½ cents for 64-66, 375-e.p. motor fuel, but practically no activity has been reported in this direction during the past two weeks other than shipments against previously placed contracts.

Kerosene and other light products were unchanged on the Gulf Coast although light fuel oil demand is picking up somewhat and shipments against orders placed in the latter part of July are easing the refiners' stock burden to some extent. Jobber buying is in the normal backwash following the spirited buying in June before price advances became effective. In the northeastern territory, light fuel oil prices are reported steady in the tankcar trade. Some shading remains in the tank-wagon market, but this is considered inevitable in view of weather conditions. Generally speaking, however, tank-wagon suppliers are holding up prices that were advanced following the rise in the bulk quotations, content to wait for the burning season to capitalize on their advantageous purchases at the low of the market.

Kerosene is unchanged at 4¾ cents to the New York tankcar trade, but at practically all other North Atlantic terminals the range is from 5 to 5⅛ cents. No. 2 and No. 3 fuel oil is generally quoted at 4¼ cents. The Bunker C fuel oil price to the marine trade in New York Harbor is unchanged at 95 cents per barrel, although price shading in this product was reported last week from the Gulf Coast where a bid of 65 cents would get adequate supplies. Some coastal refiners, however, held their Bunker C fuel oil quotations at 70 cents to the cargo buyers, but were receiving no open market orders.

There has been a distinct improvement in demand from industrial consumers of heavy fuel oil. This upturn in industrial activity has been reflected to an equal extent in the demand for lubricating oil, particularly in the Pennsylvania district where most refiners report stocks at their lowest level for the summer. Introduction of new automobile models at an earlier date this year than in 1937 is exerting a distinct influence on industrial fuel oil and lubricating oil demand. One or two of the large automobile manufacturers are preparing to start actual production of 1939 models late this month or in September. Plans of the automobile builders are also influencing steel production, which in turn is creating greater demand for fuel oil.

Advances of about a cent per gallon on most lubricating oils over the past two or three weeks are now fairly well consolidated. A few refiners in more favorable stock position have gone a step ahead of the recent advances and remaining suppliers expect to follow as soon as their individual positions justify, providing, of course, that current demand is maintained. Most of the lubricating oil business is currently going into the hands of jobbers and inter-refinery trading has tapered off, a distinct reversal of the conditions prevailing earlier in the summer.

New York petroleum circles regis-

(Continued on Page 120)

A. P. I. Weekly Refinery Statistics

Week Ending August 13, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	486,000	20,374,000	13,811,000
Appalachian	88.4	103,000	3,129,000	1,097,000
Indiana, Illinois and Kentucky	92.4	451,000	12,071,000	9,310,000
Oklahoma, Kansas, and Missouri	84.7	281,000	6,425,000	4,319,000
Inland Texas	56.6	140,000	2,159,000	1,992,000
Texas Gulf	95.7	768,000	9,303,000	12,730,000
Louisiana Gulf	96.6	127,000	2,711,000	3,383,000
North Louisiana and Arkansas	63.7	42,000	517,000	851,000
Rocky Mountains	69.7	56,000	1,416,000	841,000
California	90.9	522,000	12,522,000	94,984,000
Total reported	89.0	2,976,000	70,627,000	143,291,000
Estimated unreported	.....	319,000	3,760,000	2,970,000
*Estimated total	.....	3,295,000	74,387,000	146,261,000
*Estimated total previous week	.....	3,240,000	76,864,000	144,294,000
*August 14, 1937	.....	3,340,000	69,087,000	109,644,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending July 30, 1938	288,514,000 barrels
Week ending July 23, 1938	287,585,000 barrels
Week ending July 31, 1937	308,666,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of August 16, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dir.	Inc. tax	tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡10.3
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	14.3	12.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.3
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†9.0
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	8.5
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	10.6	4.0	7.8

***State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.**

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective August 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8.5 cents; 150 gallons and over, 8 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex grade B, 1-799 gallons, 5 cents; 800 gallons and over, 4 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. dir.	Tank-car con'r.	Inc. tax	tank-wag
Atl'tic City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.8
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank-wag	Net dlr.	Inc. tax	tank-wag
Atlanta, Ga.	19.0	16.0	7.0	12.0
Augusta	19.5	16.5	7.0	11.5
Macon	21.0	18.0	7.0	11.5
Savannah	19.5	16.5	7.0	10.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	21.5	19.5	9.0	11.5
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	20.0	17.0	7.0	9.5
Jacks'ville, Fla.	20.5	17.5	8.0	8.0
Miami	20.5	17.5	8.0	9.0
Pensacola	21.0	18.0	9.0	10.0
Tampa	20.5	17.5	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	10.5
Louisville	19.0	16.0	6.0	10.0
Paducah	16.5	13.5	6.0	10.0

***Includes 1-cent state tax.**

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Dealer	Inc. tax		tank-wag.
Denver, Colo.	15.5	5.0		11.5
Grand Junction	19.0	5.0		15.0
Pueblo	16.5	5.0		10.5
Casper, Wyo.	17.0	5.0		11.5
Cheyenne	13.0	5.0		13.0
Butte, Mont.	19.5	6.0		15.5
Billings	19.5	6.0		13.0
Helena	20.0	6.0		15.5
Great Falls	19.0	6.0		15.5
Salt Lake City, Utah	18.0	5.0		16.0
Twin Falls, Ida.	21.0	6.0		18.0
Boise	21.5	6.0		18.0
Albuquerque, N. M.	17.5	*6.5		12.0

***Includes city tax of .5 cent.**

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag.	Di-vided	Inc. tax	tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

***Includes state tax of 1 cent.**

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank-wag.	Tank-car con'r.	Inc. tax	tank wag.
Albany, N. Y.	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.5	13.4	5.0	7.5
Rochester	15.3	13.5	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.0	12.0	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.0	13.6	5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

***Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.**

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nav.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

***Includes 5-cent state tax.**

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	16.5	6.0	10.0
Norfolk	18.4	16.9	6.0	11.2
North Platte	18.4	15.4	6.0	11.0
Scotts Bluff	19.5	15.0	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Oleans, La.	19.75	17.25	*10.0	†12.0
Baton Rouge	17.75	15.25	8.0	12.0
Alexandria	17.75	15.25	8.0	10.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	17.75	15.25	8.0	12.5
Shreveport	16.5	14.0	8.0	9.5
Kn'ville, Tenn.	21.0	18.5	8.0	14.0
Memphis	19.0	16.5	8.0	12.0
Chattanooga	20.5	18.0	8.0	13.5
Nashville	20.0	17.5	8.0	10.5
Bristol	21.25	18.75	8.0	14.5

***Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.**

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank-wag. dir.	Tank-car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'd, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	12.0	5.0	7.0
Ft. Smith, Ark.	14.75	5.0	7.5
Little Rock	17.25	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

***Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.**

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

***Imperial gallon used in Canada.**

Divided dealers pay tank-wagon prices Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Kentucky) July 27 reduced tank-wagon kerosene .5 cent and July 29 reduced dealer gasoline .5 cent in Macon. July 29 reduced tank-wagon and dealer gasoline .5 cent and tank-wagon kerosene 2 cents in Savannah. July 27 reduced tank-wagon kerosene .5 cent and August 2 reduced tank-wagon and dealer gasoline .5 cent in Mobile. July 27 reduced tank-wagon kerosene 1.5 cents in Montgomery. July 27 reduced tank-wagon kerosene .5 cent in Vicksburg. July 19 advanced tank-wagon and dealer gasoline .5 cent and reduced tank-wagon kerosene 2 cents in Pensacola. August 1 reduced tank-wagon and dealer gasoline .5 cent and August 5 reduced tank-wagon kerosene 2 cents in Miami. July 19 advanced tank-wagon and dealer gasoline 1.5 cents and August 5 reduced tank-wagon kerosene 2 cents in Tampa. August 1 reduced tank-wagon kerosene .5 cent in Lexington.

New York Market

(Continued from Page 119)

tered anxiety over the crude price structure last week. Investigation indicated that misgivings are based on distress conditions prevailing in the K.M.A. field of North Texas and East Texas. Doubtless this uneasiness had the natural effect of dissuading probable purchases in the products markets until issues are clarified.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of August 16, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400 grades:		
62 oct. and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)	.05½	.05⅝
64-66 375	.04⅞	.05
68-70 360	.05⅛	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400	.04¾	.04⅞
64-66 375	.04⅞	.05

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below		.04¾
63-66 octane		.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)		.05¾

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.05
67-69 octane		.05½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400 grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)	.05½	.05⅝
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05	.05¼
65 octane	.07	.07¼
68-70 octane	.07¼	.07½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08¼
58-60 400, 65 oct. and higher	.08	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06¾	.07
Philadelphia	.06¾	.07
Boston	.06¾	.07
Baltimore	.06¾	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05⅛
60-64.9	.05⅛	.05¼
65 octane and higher	.05⅜	.05½
68-70	.05¾	.06

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.05	.05⅛

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¼
Grade 18-55	.03⅝	.03¾

NORTH TEXAS—

Grade 26-70		.03¼
Grade 18-55	.03⅝	.03¾

CALIFORNIA—

75-85 375-390	.06¼	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.04	.04¼
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04⅝	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (inland refineries)—

45	.05	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42		.03¾
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42		.03¾
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅜	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.80

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 16-10	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03⅝	.03⅞

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.20	1.40
24 plus diesel, per bbl.	1.10	1.40
24 plus diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.85
12-17 (tankcars)	.60	.90
10-17 (high sulfur)	.55	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus diesel, per bbl.	1.20	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.50	1.55
10-16 (bunkers)		.95

GULF COAST—

No. 2 fuel		.03½
43-47 diesel		.03½
48-52 diesel	.03½	.03⅝
53-57 diesel	.03⅝	.03¾
Bunkers (bulk cargoes)	.62½	.67½
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 diesel (lighterage 6¼c per bbl.)		1.75
28-30 diesel (tankers)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05½

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.15	.15½
15 pour test		.14½
20 pour test		.14
25 pour test	.13	.13½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale Oils:		
200-3	.07	.07½
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08¾	.09½
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pour test	.15	.15¼
10 pour test	.14	.14½
15 pour test	.13½	.14
25 pour test	.12	.12½
200 vis. at 70° F., 3 color:		
Zero pour test		.16
10 pour test	.13½	.14
15 pour test	.14½	.15½
25 pour test	.12½	.14

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0225	.0245

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.		.0185
124-126 (a.m.p.) y.s.		.0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¾
Snow white	.06½	.06¾
Cream	.04½	.04¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05
60-62 400	.05	.05⅛
61-63 390	.05⅛	.05¼
64-66 375		.05½

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright Stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.21

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light (July 8, 1938)*†	1.05
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light (July 8, 1938)*†	1.05
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28,1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	.51½
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Centralia, Ill. (Aug. 8, 1938)‡	$1.10 to $1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Aug. 9, 1938)†	.90
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Freeman-Redding (Mich.)	1.09½
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (July 1, 1938)	1.32
Kentucky River (July 1, 1939)	1.40
Western Kentucky (June 22, 1938)	1.90

*Posted by Pure Oil Co.

†McClanahan P. L. and Simrall.
‡Posted by Owensboro Oil Corp. (Standard of Ohio).

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective June 13, 1938)

Bradford, Pa.	$1.80
Allegany, N. Y.	1.80

SOUTH PENN OIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.80
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.46
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.40
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.30
Corning Grade Oil in Buckeye Pipe Line Co., line (June 16, 1938)	1.17

PENNZOIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.73
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.72
Includes Tidioute district.	
Group C	1.71
Includes Turkey and Tidioute districts.	
Group D	1.70
Includes Bear Creek and Porkey districts.	
Group E	1.68
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective June 13, 1938)

Cabin Creek, W. Va.	$1.40
Bradford Hollow, W. Va.	1.40
Kelly Creek, W. Va.	1.40

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.13
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17
TURNER VALLEY NAPHTHAS AND CRUDE OIL	
(January 5, 1938, by Imperial Oil, Ltd.)	
Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62
These prices f.o.b. producers field tankage.	

*Imperial Oil, Ltd.

Rocky Mountain Runs

Production estimate for week ended August 13:

WYOMING

Salt Creek	15,840
Big Muddy	1,180
Badger basin	140
Black Mountain	140
Byron	1,990
Cole Creek	190
Dallas Derby	350
Dutton Creek	70
Elk basin	40
Frannie	100
Garland	2,530
Grass Creek	230
Hidden dome	110
Hudson	340
La Barge	900
Lance Creek	11,800
Lost Soldier	1,670
Medicine Bow	3,400
Midway	40
Oregon basin	4,120
Osage	840
Pilot Butte	20
Quealy dome	750
Rock River	1,600
South Casper	480
Spindletop	10
Poison Spider	230
Teapot	20
Warm Springs	140
Wertz	700
Total Wyoming	49,970

MONTANA

Border	70
Cat Creek	590
Cut Bank	7,560
Dry Creek	1,320
Kevin-Sunburst	3,650
Pondera	590
Total Montana	13,780

COLORADO

Florence	110
Fort Collins and Wellington	320
Iles dome	2,050
Moffat	320
Orchard	40
Rangely	100
Tow Creek	160
Price	520
Total Colorado	3,620

NEW MEXICO

Cooper	5,080
Eaves	920
Eunice	25,890
Hardy	2,310
Hobbs	14,580
Jal	1,140
Langlie	4,280
Lynch	590
Lynn	900
Mattix	3,060
Monument	26,870
North Lynch	40
Penrose	5,330
Rhoades	180
Skelly	1,950
South Eunice	3,110
Vacuum	2,780
Artesia-Maljamar	6,650
Getty	300
Hogback	200
Rattlesnake	800
Table Mesa	90
Total New Mexico	107,050
Total Rocky Mountain region	174,420

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18										$.95								$.90	
18-18.9										.95								.92	
19-19.9										.95							$.94	.94	
20-20.9										.95	$.95		$.96		$1.01		.96	.96	
21-21.9										.98	.98		.98		1.03		.98	.98	
22-22.9										1.01	1.01	....	1.00		1.05		1.01	1.01	
23-23.9										1.04	1.04	....	1.02		1.07		1.04	1.04	
24-24.9										1.07	1.07	....	1.04		1.09		1.07	1.07	
Bel. 25		$.98			$.90			$.93						$.90					$.88
25-25.9		1.00			.92			.95		1.10	1.10	$.78	1.06	.92	1.11		1.10	1.10	.90
26-26.9		1.02			.94			.97		1.13	1.13	.80	1.08	.94	1.13		1.13	1.13	.92
27-27.9		1.04			.96			.99		1.15	1.15	.82	1.10	.96	1.15		1.15	1.15	.94
28-28.9		1.06			.98			1.01		1.17	1.17	.84	1.12	.98	1.17		1.17	1.17	.96
Bel. 29	$1.06		$.96	$1.03					$1.20										
29-29.9	1.08	1.08	.98	1.05	1.00			1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19		1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02			1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04			1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06			1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08			1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10			1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35						$.96	$.91												
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34			.98	1.26	1.12	1.31	1.26	1.29	1.29	
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36			1.00	1.28	1.14	1.33	1.28	1.29	1.29	
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38			1.02	1.30	1.16	1.35	1.30	1.29	1.29	
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40			1.04	1.32	1.18	1.37	1.32	1.29	1.29	
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42			1.06	1.34	1.20	1.39	1.34	1.29	1.29	
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44			1.08	1.36	1.22	1.41	1.36	1.29	1.29	

Effective July 8, 1938, Standard Oil Co. of Louisiana posted prices in Buckner, Magnolia, and Village pools in Columbia County, Arkansas, as follows: Below 25 degrees 83 cents; 25-25.9 degrees 85 cents; with 2 cents added for each degree upward to and including 40 degrees and above at $1.15.

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.

Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

Column 3—All purchasers.

Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.

Columns 5, 6, 7 and 8—All companies. Effective July 8, by Standard Oil Co. of Louisiana, Buckner, Magnolia and Village, Arkansas, 7 cents per barrel less than prices in Column 5.

Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)

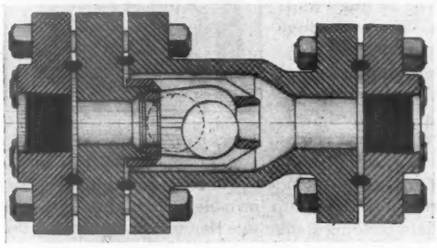
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)

Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co. Column 12—All purchasers. Column 13—All purchasers (effective July 6, 1937). Column 14—Magnolia Petroleum Co. Column 15—Humble Oil & Refining Co. (effective July 6, 1937). Column 16—Humble Oil & Refining Co. Columns 17 and 18—Shell Petroleum Corp. Column 19—Tide Water Oil Co.

New or Improved Equipment

New Addition to High-Pressure Check Valve Line

A recent addition to the line of the Daniel Orifice Fitting Co., 3352 Union Pacific Avenue, Los Angeles, Calif., is the Conoco Type non-pounding high pressure check valve illustrated. According to the manufacturer, this check valve



has been tested to pressures as high as 8,000 pounds and is designed to function under the most severe conditions encountered in high-pressure natural gas operations. The flow is through the seat and cage around the ball, and in case of back flow the ball is rolled upon the seat and the differential pressure holds it closed. It is claimed this type of valve does not pound and gives a positive shut-off at all times. Two-, three- and four-inch sizes are available regularly, furnished with grooves for A.P.I. steel ring joint gaskets; raised face flanged ends are available.

W. L. Ducker Joins Bovaird

William L. Ducker, Jr., formerly with the Engineering Laboratories, Inc., and Seismograph Service Corp., has been engaged by Bovaird Supply Co. as chief engineer. While Mr. Ducker was associated with the Engineering Laboratories and the Seismograph Service Corp. he held the position of chief engineer. Previous to that time he was district production engineer for Barnsdall Oil Co. at Seminole, Okla., and a designing engineer for the Petroleum Chemical Co. Mr. Ducker is a graduate of the University of Oklahoma, where he received a degree in Mechanical Engineering. He is a member of the board of the Mid-Continent Section of the American Society of Mechanical Engineers, and is also treasurer of that organization. His other affiliations are: Member of the National Society of Professional Engineers, Oklahoma Society of Professional Engineers and the Engineers' Club of Tulsa. The company's general offices in the Thompson Building, Tulsa, will be his headquarters.

Here and There With Men Who Manufacture Equipment

Joseph H. Hayden, secretary of the Hewitt Rubber Corp., Buffalo, N. Y., has been elected a director. William S. Carleton, of New York, and Lester D. Bigelow, of Chicago, were elected vice presidents.

Daniel I. Glossbrenner, secretary-treasurer of the Marmon-Herrington Co. of Indianapolis, manufacturer of all-wheel-drive trucks and track-laying tractors, was elected president of the National Association Rainbow Division Veterans at St. Paul, Minn.

J. S. Warren, general manager of the Maloney Tank Manufacturing Co. of Tulsa, is away from his office for a two weeks' vacation. He and Mrs. Warren are driving to Highlands, N. C., but will make short stops en route at Louisville and Lexington,

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J. B. O'Connor, vice president and director of sales of Clark Brothers Co., Olean, N. Y., is back at his desk after a vacation with his family in western Canada. Mr. O'Connor's family are returning to New York from Vancouver Island by steamship, via the Panama Canal.

Monat Develops "Stream-flow" Packless Cylindrical Valve

Monat Valve & Forge Co., Bessemer Building, Pittsburgh, Pa., has developed a packless cylindrical gate-valve, suitable for high as well as low pressures and temperatures. This rugged valve, designated the Monat Stream-flow, contains the salient construction features of both gate- and plug-valves, but, according to the manufacturers, none of the disadvantages of either. There are no cavities, and friction is said to be eliminated. The valve is available in sizes ranging from one-half inch to 8 inches in the standard metals; also in special metals and alloys for lines handling corrosive liquids and gases. The body of this valve carries a cylindrical bore, at right angles to the line of flow. A cylindrical gate is moved up and down by means of a screw in the valve-bonnet, and is prevented from turning by a key in the cylindrical bore. The run of the valve conforms in shape and size to that of the pipe.

No packing is required. The only operating part in the line of flow is the gate itself. The removable bonnet and a cap on the bottom of the body permit cleaning the valve while it is in the line. Monat valves are for steam, oil, gasoline, gases, air, etc.

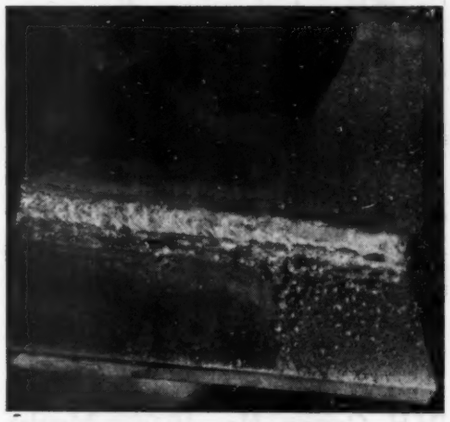
Baker Back From South America

James Baker, of the Tulsa staff of the Pittsburgh Equitable Meter Co.-Merco Nordstrom Valve Co., has returned to the United States following a special assignment in South America. Mr. Baker, who left Miami, Fla., by plane on January 2, visited Colombia, Venezuela, Aruba, Curacao, Trinidad, and Puerto Rico in the interests of his firm. Most of his travel was by plane, supplemented by trains, automobiles and boats. Mules were used to reach some locations. Mr. Baker was routed by Armco International Corp., which represents Pittsburgh Equitable Meter Co. and Merco Nordstrom Valve Co. in South America. He now is covering his regular territory.

Jim Baker on location in South America

New G-E Preparation Prevents Weld Spatter From Sticking

A new material, Glyptal No. 1294, has been announced by General Electric Co. for prevention of the adhesion of weld spatter to metals which are to be welded. According to the manufacturer, this material, which can be used without harm on any metal surface, including polished stainless steel, will not produce carbon to make the weld hard or brittle, nor will it reduce ductility. Likewise, it will not give off smoke to fog up the atmosphere, and it will not form gas pockets or cause the weld to be porous.



In applying the new Glyptal preparation, spraying is preferred to brushing because the former method assures a thinner coat. A thin coat will protect the work as well as a thick coating, if the surface is completely covered, is more economical, and dries faster. On surfaces which are to be painted this material further serves as an excellent priming coat. In addition, it prevents the forming of rust on steel in storage yards. This is particularly important if the steel later is to be welded. The preparation is said to withstand temperatures up to 600° C. for one-half hour, after which it will begin to evaporate.

Huge Plane Tires Given Severe Tests

Tire tests, most severe in aviation history, were made on the landing wheels of the giant DC-4, 42-passenger airliner built by Douglas Aircraft Co., Santa Monica, Calif. Loads of 170,000 pounds were imposed on the main landing gear and more than 50 "landings" were made in a special test laboratory before the transport plane was flown.

The tires, built by B. F. Goodrich Co., are 5 feet 5 inches in diameter, 2 feet across at the base and weigh 360 pounds. Containing 45 miles of tire cord and 4 miles of bead wire the tires, the company reports, are the largest so far used in American aviation.

Memphis Natural Enlarges Plant

The Memphis Natural Gas Co. is adding two 600-hp. six-cylinder Clark "Angle" compressors to its Guthrie, La., booster station. The station now contains four twin tandem 1,250-hp. horizontal units. The new 300-r.p.m. angle units are being added to this station to give the station more flexibility and additional capacity.

Device Keeps Compressed-Air Line Free of Moisture

Designed to keep compressed-air lines free from oil and moisture, the latest model Spraco oil and water extractor, announced by Spray Engineering Co., 171 Central Street, Somerville, Mass., is designated as maintenance-free, since it has no moving parts or packing and requires no adjustments. An automatic drain-valve prevents the accumulation of condensate in the reservoir at the bottom of the extractor shell.

Elimination of moisture and free oil is accomplished by the cooling effect of a small volume of circulating water passing through a cooling-coil, by a reduction in the air velocity through the extractor, and by changes in the direction of air flow. Oil and water are collected on a series of baffles in the air stream, deposited in the reservoir and automatically drained off. Sizes are available for 40 and 100 cfm. Larger capacities are provided by multiple units.

P&H Crane No. 10,000 Marks Half a Century in Field

Harnischfeger Corp., Milwaukee, Wis., recently produced and sold P&H crane No. 10,000. The illustration shows the 40-ton machine, of 100 feet span, equipped with a 10-ton auxiliary hoist. Ben

Van Horn, sales manager of the P&H crane division, is seen affixing a plate bearing the epoch-marking number.

P&H (Pawling & Harnischfeger) started in the overhead traveling crane industry with the first three-motor machine. Overhead traveling cranes are credited with being an important factor in helping to lift America out of old-fashioned handling methods. Among the early buyers of P&H cranes were E. P. Allis, Baldwin Locomotive Works, Bethlehem Steel, New York Ship Building Corp., American Brass Co., American Smelting & Refining Co., American Sheet & Tin Plate Co., Falk Corp., and Chain Belt Co.

Bulletins, Booklets and Other Literature for the Trade

Westinghouse Electric & Manufacturing Co. offers a 12-page booklet describing and illustrating Westinghouse Type C turbines for mechanical drive.

A bulletin on the Permutit rate-of-flow indicator is mailed on request to Permutit Co., 330 West Forty-second Street, New York.

A new catalog has been issued by the Ford chain block division of American Chain & Cable Co., Inc., Philadelphia, Pa. In addition to the regular Ford line of spur-geared, screw and differential chain hoists, jib cranes and differential hoists with ball-bearing mountings and other equipment are presented.

A 32-page booklet on heavy-coated Murex electrodes has been prepared for distribution by Metal & Thermit Corp.

Oil Well Supply Co. has issued a bulletin on its 5,000-pound pressure cementing pump, duplex piston type.

"High-Temperature Fans" is the subject of a four-page illustrated bulletin recently published by Michiana Products Corp., Michigan City, Ind. The applications (where temperature requirements range up to 1,800° F.) are enumerated and construction is described. The stock sizes mentioned include fans up to 32,000 cubic feet per minute capacity.

Carbide & Carbon Chemicals Corp., 30 East Forty-second Street, New York, announces the ninth edition of "Synthetic Organic Chemicals." This 80-page book contains specifications, properties, and uses of its 105 industrial organic chemicals, including 29 which have become commercially available since the last issue of this catalog.

Installations using Bristol's system of coordinated process control are illustrated in a bulletin recently published by the Bristol Co., Waterbury, Conn. A few outstanding features about the operating results of each application are given.

Amercoat cold-applied coatings are discussed in a 16-page booklet obtainable from Amercoat Sales Agency, 5905 Pacific Boulevard, Huntington Park, Calif. These corrosion-resisting coatings are applicable to pipe lines, refinery equipment, etc.

The International Nickel Co., Inc., 67 Wall Street, New York, is mailing on request a reprint of the article, "Nickel—A Versatile Automotive Metal," by H. E. Blank, Jr., which appeared originally in Automotive Industries.

A new International Harvester diesel crawler tractor is announced in a folder from International Harvester Co., Inc., 180 North Michigan Avenue, Chicago.

Two Welding-Tips for Work on Pipe Lines Offered by Linde

The Linde Air Products Co., New York, unit of Union Carbide and Carbon Corp., announces two new multiflame welding-tips for pipe line construction by the Lindeweld process. The introduction of these two new multiflame welding-tips has resulted in increased speeds of 25 per cent or more and a correspinding reduction in gas consumption.

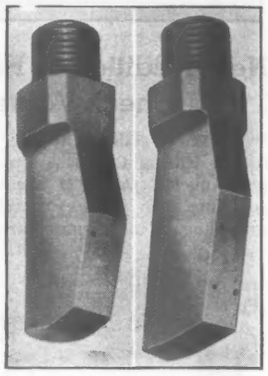


Fig. 1 *Fig. 2*

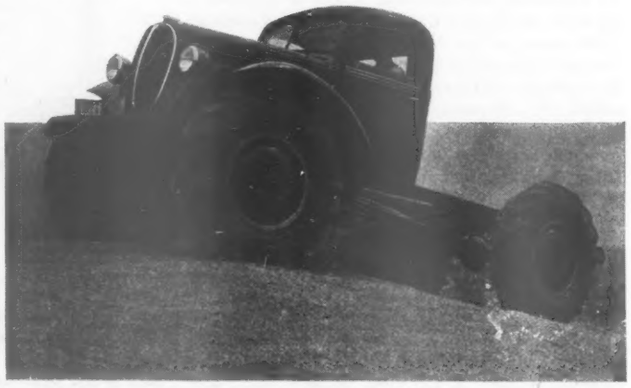
The four-flame tip is designed for position welds. The six-flame tip is intended primarily for rolling welds. The four-flame tip provides, in addition to the main welding flame, two flames for preheating the vee and a fourth flame for preheating the welding-rod. The six-flame tip is similar to the four-flame tip in design, with the exception that it has two additional vee preheat flames, so that four flames preheat the wall of the pipe, a fifth flame preheats the welding-rod, and a sixth flame does the actual welding. Figure 1 is the four-flame tip for position welds; Figure 2, the six-flame for rolling welds.

Timken Bearings on Famous Plane

Forty Timken bearings are used in the Lockheed plane in which Howard Hughes broke the round-the-world record. Each of the two 9-cylinder Wright Cyclone motors is equipped with 18 Timken bearings, using one on each rocker-arm. The Wright Aeronautical Corp. has been using these bearings on the rocker-arms of its engines for several years. Timken bearings are used also in the Goodyear landing-wheels of the plane. Timken Aircraft Quality electric furnace steels are used for many important parts in Wright aircraft engines, such as the crankcase, crankshaft, cylinders, master connecting-rods, articulated connecting-rods, piston-pins and propeller parts.

MARSH-BUGGY "FLOATS" THE LOAD IN SWAMPY AREAS

Oil-field men, roaming the swamps and marshes of the deep South and the sand and clay of the Southwest, long have sought an answer to a transportation problem. They are said to have it now in the marsh-buggy, with all wheels driving, announced by Marmon-Herrington Co., Inc., of Indianapolis, Ind.



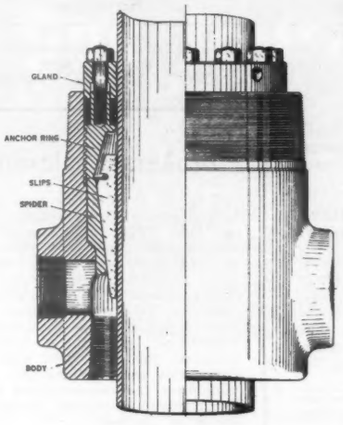
The Marmon - Herrington marsh-buggy is a combination of the power of all-wheel drive and the positive traction and flotation of huge 13.50 by 24 single tires mounted, front and rear, on spoke-type disc wheels.

Instead of sinking into soft marshy ground or sand, the marsh-buggy lies on top of it and rolls across, it is explained. The tremendous tires, carrying only 8 or 10 pounds of air, "float" unusually heavy loads across marshes, mud, and sand. Aided by an equal distribution of power to all wheels, the marsh-buggy makes an effective vehicle for the transportation of geologists, oil scouts, and operators and their instruments and equipment into swamp and sand-locked territory where unusual clearance as well as tremendous traction and effective power are necessary.

Neither the appearance nor the economy of the Ford V-8 has been sacrificed in producing the new unit. The marsh-buggy has a 135-inch wheelbase and its power plant is the 85-horsepower Ford V-8 motor.

Casinghead of Slip Suspension Type Announced by National

A slip suspension type casinghead, designed to support and pack off long strings of casing is announced by the National Supply Co., Toledo, Ohio. This is designated the National Type JH. The packing, located above the slips, is entirely



independent of the weight of the casing. A patented arrangement makes this head suitable for high-pressure service. Two rows of narrow asbestos packing are compressed by a single gland. The packing is easy to apply and can be compressed by one man using a small end wrench.

When both ends are threaded the head is known as the National Type JH-1 (illustrated). The Type JH-3 is identical in design with the Type JH-1 except for a flange at the upper end of the body. The flange is of the proposed A.P.I. specifications which permit bolting directly to tubing-head or blowout-preventer. A blowout-preventer can be attached to the flange and all drilling performed with this equipment in place, after which it can be removed while the cement is setting.

Equipment Manufacturer Says All Gain From Advertising

The following editorial on "Advertising," written by A. A. Buschow, president of the Bridgeport Machine Co., Wichita, Kans., appears in the current issue of that company's publication, the Bridgeport Bulletin:

"To make a statement concerning the wisdom of paying good money for the purchase of space in any publication for the purpose of telling a business story may seem unnecessary. If the procedure increases the operating expense more than some other business method, it is a failure and furthermore, the cost is not justified unless both seller and buyer gain.

"The opportunity of finding a buyer is worth money to the seller, and likewise, it is an advantage to the buyer to obtain knowledge concerning where to buy and what is the fair price. The one interest may make a profit and the other a saving; thereby both gain.

"The present time is a buyer's market. It is because more is offered for sale than is needed. Better quality, lower prices, improved service or more attractive terms follow. The time to buy is when the other fellow wants to sell. 'Wants to sell' is sweet music to the ears of the prospective buyer.

"Generally our memory is short, and if we are not continually reminded we may soon forget where we made a purchase and why. It is impractical to try out everything; consequently, everyone is influenced either by his own experience or by statements which sound reasonably true.

"Knowing something of interest and passing it along to as many people as possible, at the lowest cost, is really a proper definition of advertising. Of interest is mutual and that's what makes it worth while. Keeping properly informed and holding down operating costs are essential to success. Furnishing information on the one hand, and on the other keeping fully informed, are present-day needs of business life. To induce more people to buy is an advantage, and any legitimate method which gets results is justifiable. Proper advertising does not increase the expense of operations, therefore, will continue to be an important assistance in bringing about the closing of business transactions."

Strokontrol Pumping Device

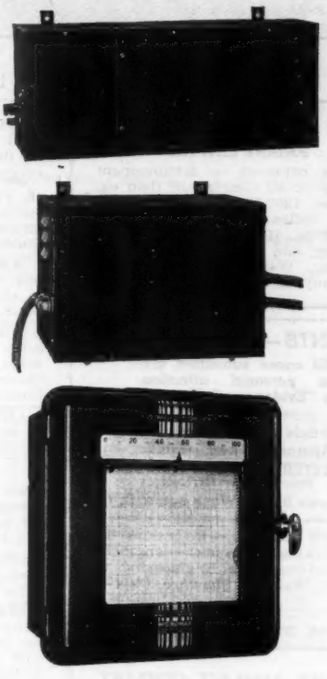
Gustin-Bacon Manufacturing Co. has recently placed on the market a new oil field product known as the Strokontrol, an intermittent pumping device to be used on part time oil wells. It can be adjusted to pump the well an effective number of hours slightly greater than the pumping off time, but distributed over the 24-hour period and without changing the lifting velocity. It is installed very easily between the central power or beam well back crank and the knock-off post connecting the pull rod line to this source of power.

Increases in daily production of from 10 per cent to 50 per cent, it is reported, have been obtained, due to the fact that the Strokontrol allows the fluid to be pumped from the hole at approximately the rate of flow into the hole maintaining the proper fluid level.

The material used in the Strokontrol has been carefully selected to promote long life. While the timing mechanism as a group is new, the component parts have been in common usage on machines for years. The heart of the Strokontrol timing mechanism is composed of a latch, a cam and over-running clutches controlling the connecting and disconnecting of the well to the source of power. The number of power strokes required to rotate the cam 180° determines the pumping strokes and similarly the number of power strokes required to rotate the cam the other 180° determines the number of off strokes. The pumping and off strokes, independently of each other, can easily be set for 3, 4, 6, 8, 12 or 24 strokes permitting ratios between pumping and off strokes of from a ratio of 1 to 8 to a ratio of 8 to 1. The Strokontrol, it is stated, eliminates the hazards involved in the present method which requires the pumper to hang on and off his wells manually.

Glass Electrode pH Equipment Designed for Exacting Work

Coleman Electric Co., Inc., 310 Madison Street, Maywood, Ill., manufacturer and designer of instru-



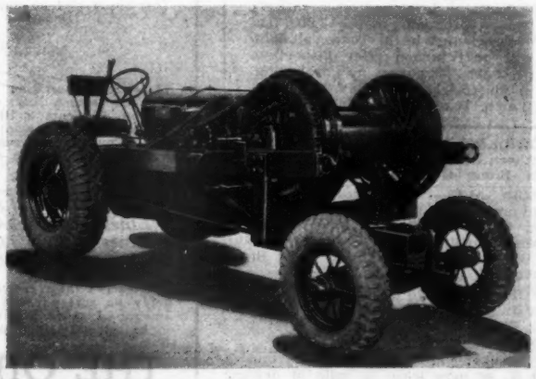
ments for pH measuring, announces a new line of instruments for automatic pH recording and control with the glass electrode. The purpose has been to combine the best practice in automatic recorders with the best practice in electronic amplifiers, and produce a compact, accurate and efficient assembly of units to perform the required work on an economical basis.

Coleman automatic glass electrode pH equipment consists of three compact units: an amplifier and cell chain, housed together, a power pack, and any one of several standard recorder-controllers. Each unit is contained in a strong, fume-proof case and shielded so that humid or chemical-laden atmosphere will not cause deterioration of the instruments or affect their operation. This instrument is reported to be sensitive to approximately 0.02 pH and accurate to 0.05 pH.

M. I. W. HOIST SERVICES WELLS UP TO 3,500 FEET

Muskogee Iron Works, Muskogee, Okla., announces its new H-1 hoist, mounted on the International Harvester Co. I-30 tractor, for servicing wells up to 3,500 feet in depth. Developing 39 horsepower at 1,150 r.p.m. it is a fast and powerful unit. With six line speeds produced through its transmission and chain reductions, from 80 feet up to 906 feet per minute single-line speed is obtained. The machine affords unusual flexibility. It pulls 12,400 pounds at 80 feet.

A special three-speed transmission is designed to fit the I-30 industrial tractor. It is mounted on the tractor to engage the bevel gear and in such a manner that the transmission is at the side of the tractor. The drumshaft is stationary. The drum is free-wheeling and mounted on ball bearings. The front wheels of the tractor are moved forward to equalize the load between front and rear wheels. Hoist and hoist transmission can be mounted on the tractor either in the Muskogee Iron Works plant or in the field. The unit is equipped with 7.50 by 18 front and 11.25 by 24 rear tires with 52-inch tread, providing maximum traction for easy transport and through field conditions.



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Wanted for buyers Oil Producing properties of merit, right price from owners in Mid-Continent Area. Address Box J-528, The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION WANTED
Partially developed lease entirely proven producing depth 2,000 feet or less, must be in Texas, all data will be returned after inspection, personal purchase no brokering. Submit price. P. O. Box 2202, Fort Worth, Texas.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

FOR SALE—75% interest in 840 acres semi-proven Oil and Gas leases near Celina, Tenn. Within one mile of proven acreage. Drilling rates reasonable. Frank H. Blum, Agent, 1205 Union Trust Bldg., Cincinnati, Ohio.

FOR SALE: Two 40 ac. N. M. oil leases. San Juan Co., Sec. 16-23-11W. Eddy Co., Sec. 31-16-28E. Write, Presley Guie. 1732 Whitley, Hollywood, California.

OPPORTUNITY for lime production at 950 ft. 40 acre lease ¼ mile of drilling well $300, 40 acres ½ mile of well $150. Good geology. Also 40 acre offset to two producing wells 730 ft. $400. Particulars Box 10, Kincaid, Kansas.

Leases and Drilling Blocks

N. MEX. weekly Oil Scout Report up to minute locations and developments. Send $1.00 for 2 months' service. Roy G. Barton, Hobbs, New Mexico.

100%, 200%, 300% per annum possible on your investment. 80 acres offsets a million shallow gasser. On pipe line. I furnish lease, drill well, $850.00. H. B. Buddenborg, Osawatomie, Kansas.

WANTED: 6,000-foot test well drilled this fall. Give full information in regard to equipment and responsibility in first letter. Box 196, Sidney, Nebraska.

WILL lease to responsible party 160 acres in 33-18-9, Creek County, or 200 acres 5 and 6-1N-2E, Murray County, Oklahoma. W. L. Suiter, 1016, Baltimore, Kansas City, Missouri.

LEASES-ROYALTIES, South Louisiana 20 ac. up; $1.50 acre and up. Land Owner. John Derryberry, DeRidder, Louisiana.

NOTICE
1,500 acres, 5 yr. leases—Northern Clay County, Illinois—5-N, 5-E. Will turn this for small bonus and a drilling contract. Leo H. Graves, Farina, Illinois.

800 ACRE block. Edging Beecher City Pool. Four yr. lease. Rental paid for yr. Price $8,000. Elton Beck, Herrick, Ill.

BLOCK of 3000 acres adjoining noted Fairport oil field in Russell County, Kansas, for lease, with drilling agreement or will sell this highly improved land for $25.00 per acre with one-fourth of mineral rights reserved. George H. Gutru, c/o Hotel O'Brien, Russell, Kansas.

TRADERS, owners and investors in production, royalties, leases and lands in the Texas Panhandle, Okla., and New Mex. Am quitting the brokerage business after 30 years here and offering my services to the public. A report and opinion on any deal or value offhand one dollar. Inspections and reports higher. E. B. Reeves, Alanreed, Texas.

OWNERS of bargains in production, royalties, leases and lands. I have quit the brokerage business, but have friends and clients who will buy your bargains. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

ABOUT 4000 acre block Massac County, So. Illinois, on structure, low rentals. Quick sale $1 per acre. J. N. Lawler, Girard, Kans.

I OWN 3,000 acres free in N. Pittsburg and Atoka Cos., Okla. 40 to 1000 A. tracts. No trades. Cash sale, lease or royalty, $5 to $25 per A. Townsite on 2 RRs. near production. J. E. Cavanaugh, Baker, Ore.

Leases and Drilling Blocks

BREWSTER COUNTY—TEXAS
Offer small tracts of land in fee all minerals included CHEAP. Write A. C. Smith, P. O. 200, San Antonio, Texas.

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building. Detroit, Michigan.

INQUIRIES SOLICITED FROM CORPORATIONS INTERESTED IN RAISING CAPITAL THROUGH THE MARKETING OF CORPORATE SECURITIES.
BROWN HARTWELL COMPANY
110 EAST 42 ST., NEW YORK

IF YOU have producing oil and gas properties financially distressed, even if in litigation, including shut-down wildcats, contact us for assistance. Address Box J-521, The Oil and Gas Journal, Tulsa, Oklahoma.

CAPITAL CONTACTS arranged for new and old established enterprises, seeking assistance for expansion or increased production purposes. New corporations organized, assisted and placed under way Personal Service Bur., Box 113, Wilmette, Illinois.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years' experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Avenue, Torrance, California. Phone 983.

Legal Blanks

Since 1908 Burkhart's legal forms have served the Oil Industry—Free catalog & samples. Burkhart Printing & Sta. Co., 115 So. Cincinnati, Tulsa, Oklahoma.

Crude Oil Production

CRUDE OIL
Buyers for Southern Illinois and East Texas Oils from dependable sources. Address Box J-527, The Oil and Gas Journal, Tulsa, Oklahoma.

Mailing Lists

ROYALTY Lists. Unit Owners Lists Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

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Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only
GRIMES ROYALTY CO.
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ROYALTIES—ADEQUATE RESERVES
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PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G Barton, Hobbs, New Mexico.

WRITE US TODAY
For our offering of producing and nonproducing oil royalties.
RUBUSH and COMPANY
1307 Pacific Ave. Dallas, Texas

For Sale—Maps

1938 REVISED EDITION
MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields
Price $1.00 postpaid

Write for descriptive folder of Oilfield and County Ownership Maps.
ZINGERY OIL MAP COMPANY
Fair Building Fort Worth

1938 MAP OF
MID-CONTINENT STATES
including Oklahoma, Kansas, Texas, New Mexico, Colorado, Arkansas, Louisiana, Mississippi, Alabama, Missouri, Southern Illinois and Indiana, Western Kentucky and Tennessee. Shows Counties, County-seats, Oil and Gas Fields and Principal Geologic Features of entire area.
Price $1.00 Postpaid.
THE KELLY MAP COMPANY
P. O. Box 1773 Tulsa, Oklahoma.

Real Estate

OFFICE BUILDING
Popular office building in prominent Southwestern city, yielding attractive return, available at sacrifice price. Cash necessary only several hundred thousand dollars, balance easy terms. Write Box J-483, The Oil and Gas Journal, Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
NEW—Mid-Continent Oil & Gas Association 1938 Model Forms of Unit Operating Agreement #2, Exhibit #2-A and Accounting Procedure #2-B in stock for immediate delivery, sample gratis. Olds Press, 215 East Third St., Tulsa, Okla.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE. MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*

	1 time	2 times	3 times	4 times
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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Tulsa, Oklahoma